

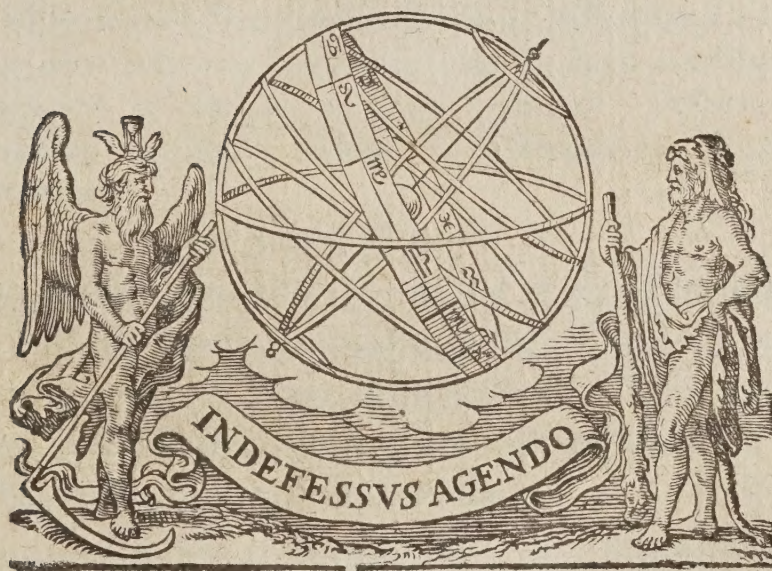
PHILIPPI LANSBERGII
TRIANGVLORVM
GEOMETRIÆ
LIBRI QVATVOR;

In quibus novâ & perspicuâ methodo, &
ὑποδείξει, tota ipsorum Triangulo-
rum doctrina explicatur.

Ad Senatum Populumque Middelburgensem,

EDITIO SECVNDA

Ab Autore recognita, multisque in locis aucta.



AMSTERDAMI,
Apud GVILIELMVM BLAEVW,
Anno cId Idc xxxi.

7A

GEOMETRIÆ TRIANGVLORVM LIBER I.

*De magnitudine rectorum linearum quæ circa Circuli
peripheriam considerantur.*

I.



TRIANGVLORVM Geometria est, quæ ex
tribus quibuscunque, vel angulis, vel late-
ribus, in rectilineo aut Sphærico Trian-
gulo datis, reliquorum laterum angulo-
rumque dimetiendorum rationem tradit,
adminiculo Canonis Triangulorum, ex
magnitudine rectorum linearum, quæ cir-
ca circuli peripheriam considerantur, compositi.

*Suscepta nobis est explicanda Triangulorum Geometria, rectè igitur à definitio-
ne ejus auspicamur: omnis enim quæ à ratione suscipitur de aliqua re institutio, de-
bet à definitione proficisci, ut intelligatur id de quo disputatur. Definitio autem
præmissa cum à partibus totius doctrinæ sumpta sit, valde clara est, & sigillatim
deinceps demonstrabitur.*

ΠΟΡΙΣΜΑ.

Ejus itaque partes tres sunt. Prima ex primis Geometriæ
elementis, rectorum linearum magnitudinem, quæ circa cir-
culi peripheriam considerantur, demonstrat: Altera Canonis
Triangulorum σύνταξις: Postrema, usum ejus in calculo Trian-
gulorum rectilineorum, & Sphæricorum.

2. Rectorum verò linearum quæ circa circuli peripheriam
considerantur, aliæ sunt in circuli peripheria, aliæ extra, aliæ
per circuli peripheriam.

*Veteres Mathematici cum solis subtensis in Triangulorum Geometria uteren-
tur, rectorum solummodo magnitudinem quæ in circulo sunt investigabant. Nobis*

A

verò

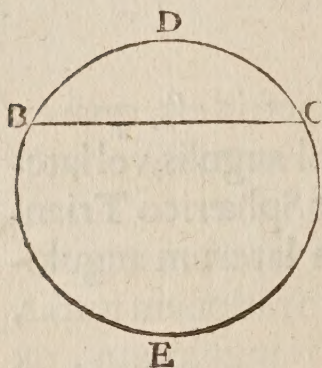
verò cum plenior, planiorque mensurandi ratio explicanda sit, etiam earum quæ extra & per circuli peripheriam sunt, magnitudo demonstranda est.

De magnitudine rectarum in Circuli peripheria.

3. In circuli peripheria considerantur Subtensa, & Sinus.

4. Subtensa est recta linea in circulo, dirimens eum in duo segmenta; & utrumque pariter subtendens.

Talis est in adjecto schemate recta BC. dirimit enim circulum BDCE in duo segmenta, BDC & BEC: & utrumque pariter subtendit.



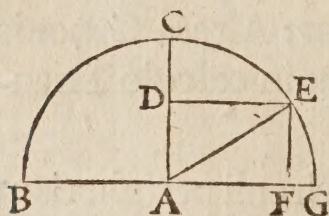
5. Sinus, est recta linea in semicirculo, ab arcus termino perpendicularis.

Vox Sinus Arabica est, & proinde barbara; sed cum longo usu approbata sit, & commodior non suppetat, nequaquam repudianda est: faciles enim in verbis nos esse oportet, cum de rebus convenit.

6. Sinus rectus est aut versus.

Recentiores aliqui Sinum dividunt in primum & secundum: nam cum ex præmissa Sinus definitione, versus non minus perpendicularis sit quam rectus, etiam rectum esse contendunt, & proinde vitiosam distributionem Philosopho ubi partes conveniant. Verum cum hoc verso Sinui proprium sit, quod recto versus sit, rectus solummodo κατά τὴν; nulla causa est ab usitata divisione recedendi.

7. Sinus rectus est recta linea in semicirculo, ab arcus termino perpendicularis in diametrum, dividens semicirculum in duo segmenta; ad quorum utrumque pariter refertur.



Talis est in adjunctâ figurâ recta EF; est enim ab E arcus termino, perpendicularis in diametrum BA FG; dividitque semicirculum BCEG in duo segmenta, GE, & BCE, ad quorum utrumque pariter refertur.

ΠΟΡΙΣΜΑ.

Itaque Sinus rectus, est semissis Subtensæ arcus dupli.

Nam quod Subtensa est in circulo, id Sinus rectus est in semicirculo, quemadmodum definitiones Sinus recti & Subtensæ, inter se collatæ ostendunt.

8. Sinus

8. Sinus rectus peripheriæ, & complementi sui æquepossunt radio.

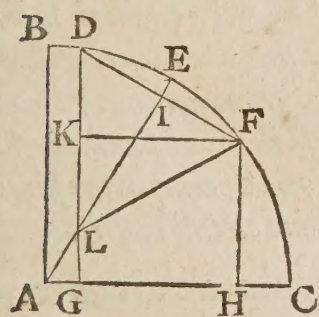
Complementum peripheriæ dicimus reliquam peripheriam datæ ad circuli quadrantem. Sit igitur in præmissa figura, recta EF, sinus rectus peripheriæ GE vel BCE: & complementi sui CE sinus rectus ED, vel æqualis illi AF per trigesimam quartam primi elementorum. Dico AF & EF, æquepossesse radio AE. Nam per penultimam primi Euclidis, in Triangulis rectangulis, quadrata laterum rectum angulum continentium, æqualia sunt lateri rectum angulum subtendenti. Sed AFE est Triangulum rectangulum ad F per septimam hujus, crura verò rectum ambientia sunt AF & EF: æquepossunt ergo radio AE rectum angulum subtendenti; quod erat demonstrandum.

ΠΟΡΙΣΜΑ.

Itaque dato radio cum sinu recto peripheriæ, datur etiam sinus rectus complementi sui: dempto enim sinus noti quadrato ex quadrato radii, relinquitur quadratum sinus complementi; cujus radix est ipse sinus quæsitus.

In exemplo sit radius AE 10, & EF 6; erit DE 8: ablato scilicet quadrato EF 36, ex quadrato radii AE 100, & residui 64, quadrato latere 8 assumpto.

9. Differentia Sinuum rectorum peripheriarum duarum, à circuli sextante æquali intervallo remotarum, æquatur Sinui recto peripheriæ alterutrius, à circuli sextante intervalli.



Sint in quadrante ABC peripheriæ duæ CF & CD, æquali intervallo ab E circuli sextante remotæ; & harum recti sinus FH & DG: differentia verò sinuum DK. Dico DK differentiam sinuum rectorum peripheriarum datarum, æquari DI vel FI, alterutrius peripheriæ à circuli sextante intervalli. Triangulum enim DLF est æquiangulum (nam DL lateri Trianguli rectanguli DIL, æquatur LF lateri Trianguli rectanguli FIL per quartam primi elementorum: & proinde anguli ad D & F in Triangulo DLF per quintam ejusdem æquales sunt) Sed angulus DLE est partium 30, æqualis scilicet angulo BAE per secundam & quintam sexti elementorum: totus itaque DLF est partium 60. Talium verò etiam est angulus ad D & F sigillatim per trigesimam secundam primi elementorum.

11. Sinus peripheriæ versus, & complementi sui rectus æquantur radio.

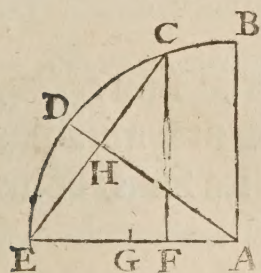
Sic in figura superiori, recta FG, sinus versus peripheriæ GE; & AF, sinus rectus complementi sui æquantur radio AFG. Nam per communem sententiam, Totum æquale est omnibus partibus suis simul sumptis.

ΠΟΡΙΣΜΑ.

Proinde radio dato, & sinu recto complementi peripheriæ, datur ipsius peripheriæ sinus versus. Dempto enim sinu recto complementi peripheriæ ex radio, relinquitur sinus versus peripheriæ datæ, quadrante circuli minoris: adjecto vero sinu recto excessus peripheriæ super circuli quadrantem ad radium, componitur sinus versus peripheriæ datæ; quadrante circuli majoris.

In exemplo detur radius AG 10, & AF 6, rectus sinus peripheriæ EC, complementi EG ad circuli quadrantem: erit FG 4, sinus versus peripheriæ EG, quadrante circuli minoris. Rursus, sit CE, excessus peripheriæ BCE, super circuli quadrantem BC; & sinus rectus ejusdem DE vel AF 6, radius AB ut supra 10: erit BAF 16, sinus versus peripheriæ BCE, quadrante circuli majoris.

12. Sinus rectus & versus, æque possunt sui arcus subtensæ.



Sit in quadrante BCDE, CF sinus rectus arcus CE; EF ejusdem peripheriæ sinus versus: & Subtensæ ejusdem CHE. Dico, CF sinum rectum, & EF versum, æquari CHE, subtensæ arcus sui CDE. In re-ctangulis enim triangulis per penultimam primi Elementorum quadrata laterum rectum ambientium, æquantur quadrato lateris recto angulo oppositi: sed Triangulum CFE, est rectangulum ad F per septimam hujus: Latera verò rectum ambientia sunt sinus CF & EF; oppositum recto angulo latus est CE, subtensæ arcus CDE. Itaque quadrata sinuum CF & EF, æquantur quadrato subtensæ CE: quod erat demonstrandum.

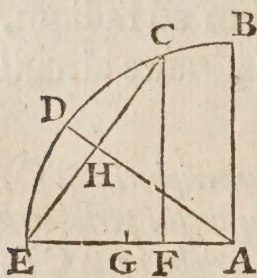
ΠΟΡΙΣΜΑ.

Quare cujusvis peripheriæ recto sinu, & verso cognito, invenitur

venitur & subtensa ejus; & sinus rectus peripheriæ dimidiæ: quadrati enim recti sinus, & versi peripheriæ aggregati radix, datæ peripheriæ subtensa est; & semissis ejus, est sinus rectus peripheriæ dimidiæ.

In exemplo sit EF 6, & CF 8: erit CHE subtensa, 10; & HE, sinus rectus DE, peripheriæ dimidiæ per πρόσιμα septimæ hujus 5: quadratum enim EF est 36, quadratum CF 64; horum aggregatum est 100, & radix ejus 10, pro subtensa CHE: Itaque HE vel HC est talium 5.

13. Sinus rectus peripheriæ in circuli quadrante, media proportionem est ad semiradium, & sinum versum arcus dupli.



Esto in diagrammate datus arcus ED, ad quem duplus sit EC: dico AG semiradium, esse ad HE sinum rectum arcus DE; ut HE ad EF, sinum versum arcus dupli EC. Triangula enim AHE, & EFC similia sunt, ob rectos angulos ad F & H per septimam hujus, communem ad E. Itaque latera eisdem angulos continentia per quartam sexti elementorum sunt proportionalia. Quare ut AE latus recto appositum, ad latus CE recto oppositum; ita EH latus minus rectum ambiens, ad EF latus minus rectum ambiens. Sed ut AE ad CE; ita AG semiradius ad HE semissem subtensæ, per decimam quintam quinti elementorum. Ergo ut AG ad HE; ita HE ad EF, quod erat demonstrandum.

ΠΟΡΙΣΜΑΤΑ duo.

Itaque semiradio dato, & cujuscvis peripheriæ sinu recto, datur etiam sinus versus peripheriæ duplæ: Nam ut semiradius se habet ad sinum rectum peripheriæ datum; ita sinus rectus peripheriæ datus, ad sinum versum duplæ.

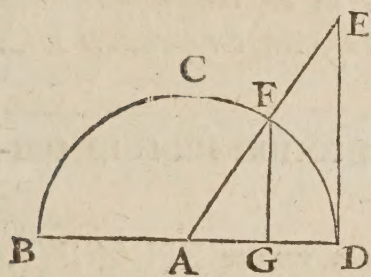
In exemplo, sit AG semiradius 5, & HE 6; erit EF 7 paulò plus. Nam ut AG 5 ad HE 6; ita HE 6 ad EF 7 paulò plus, sinum versum CE peripheriæ duplæ. hinc verò rectos sinus AF & FC invenire non est difficile, undecima & octava hujus hoc indicantibus.

Dato vero semiradio, & sinu cujuscunque peripheriæ verso, invenitur & sinus rectus peripheriæ dimidiæ: factum enim
à semi-

à semiradio per datæ peripheriæ sinum versum , æquatur sinui recto peripheriæ dimidiæ.

In eodem exemplo, detur AG semiradius 5; & FE sinus versus peripheriæ CE 7: erit HE sinus rectus peripheriæ dimidiæ 6 fere. Nam ut AG 5 ad HE: ita HE est ad FE 7. Factus verò ab AG 5, per FE 7, scilicet 35, est æqualis facto per se, per vigesimam septimi Euclidis. Quare hujus radix quadrata 6 fere, HE sinui recto peripheriæ dimidiæ competit.

De quantitate rectarum extra circuli peripheriam.



14. Extra circuli peripheriam consideratur recta peripheriam tangens.

Talis est recta DE, tangit enim peripheriam FD.

15. Tangens peripheriæ est recta linea, extremo diametri perpendicularis, in radium per arcus terminum continuatum; ipsi arcui & reliquo ad semicirculum competens.

Ita in præmissa figura, tangens DE est perpendicularis extremo diametri BAD, in radium AF continuatum per arcus terminum F: competens arcui FD, & reliquo ad semicirculum BCF.

16. Tangens peripheriæ se habet ad radium; ut peripheriæ sinus rectus ad sinum rectum complementi.

Esto in præcedenti figura recta ED, tangens peripheriæ FD; & ejusdem rectus sinus FG, complementi AG: radius AD. Dico rationem ED ad AD esse, ut FG ad AG. Triangula enim AFG, & AED, sunt æqui-angula, ob rectos angulos ad D & G, communem ad A. Itaque per quartam sexti elementorum latera habent proportionalia.

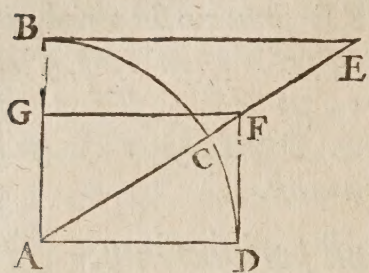
ΠΟΡΙΣΜΑ.

Quare sinu recto peripheriæ cujusvis, & complementi cognito, ejusdem tangens non latebit. Nam ut rectus sinus complementi peripheriæ se habet ad sinum rectum ipsius peripheriæ: ita radius ad tangentem ejusdem.

In exemplo, sit AG 6, FG 8, & AD 10; erit ED 13 paulo plus. Nam ut 6 ad 8; ita 10 ad 13 paulo plus.

17. Ra-

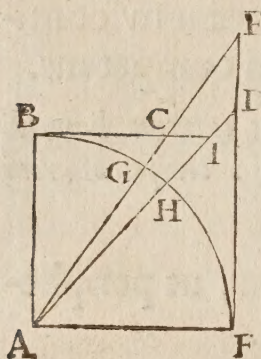
17. Radius media proportione est ad tangentes peripheriæ, & complementi.



Est recta FD, tangens peripheriæ DC; complementi verò BC, tangens EB: radius AB, vel AD. Dico AB, vel AD radius, media proportione esse ad DF & BE, tangentes peripheriarum DC & BC. Triangula enim ADF (vel AGF per trigessimam quartam primi elementorum) & ABE sunt æquiangula, ob rectos angulos ad B & D (vel G) communem ad A. Itaque per quartam Sexti elementorum, ut GA, tangens peripheriæ CD, ad GF radius: ita AB radius, ad BE tangentem complementi BC.

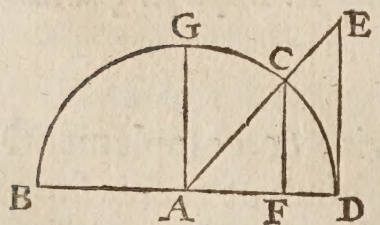
ΠΟΡΙΣΜΑ.

Quare tangentes arcuum complementorum suorum tangentibus reciproce proportionales sunt.



Sint enim in adjuncto schemate arcuum FH & FG, tangentes FD & FE; & complementorum BG & BH, tangentes BC & BI. Dico rationem FD ad FE esse, ut BC ad BI. Nam per vigesimam octavi Euclidis, Similes plani sunt, inter quos unus proportionalis medius intercidit. Sed inter FD & BI, item FE & BC, unus proportionalis medius intercidit, nempe radius: similes ergo plani sunt. Sed per penultimam definitionem septimi Euclidis similes plani latera habent proportionalia: Quare, ut FD ad FE, ita BC ad BI; quod erat demonstrandum.

De magnitudine rectarum per circuli peripheriam.



18. Per circuli peripheriam consideratur recta peripheriam secans.

Talis est recta AE; secat enim peripheriā DCB in C.

19. Secans peripheriæ, est recta linea per peripheriæ terminum, in tangentem ducta; peripheriæ sectæ & reliquæ ad semicirculū competens.

Ita in præmissa diagrapha, secans AE ducta est per terminum peripheriæ DC in tangentē ED: competitque peripheriæ CD, & reliquæ ad semicirculū BC.

20. Ra-

20. Radius media proportione est ad peripheriæ sinum rectum, & secantem complementi.

Est in figura superiori AF, sinus rectus peripheriæ GC; & AE secans peripheriæ CD (complementi prioris ad circuli quadrantem) dico AF sinum peripheriæ GC esse ad AC radium, ut AD radius ad AE secantem complementi. Triangula enim AFC, & ADE, sunt æquiangula; ob rectos angulos ad F & D, communem ad A. Itaque per quartam sexti elementorum, ut AF ad AC; ita AD ad AE: quod erat demonstrandum.

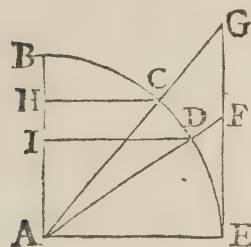
ΠΟΡΙΣΜΑΤΑ duo.

Itaque ex sinu recto cuiusvis peripheriæ, etiam complementi secans datur: ut enim peripheriæ datæ sinus rectus se habet ad radium; ita radius ad secantem complementi.

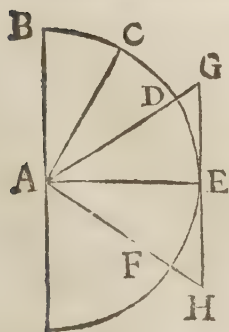
In exemplo sit AF 5, & AD 10; erit AE 20. Nam ut 5 ad 10; ita 10 ad 20, secantem AE.

Et secantes arcuum complementorum rectis sinibus reciproce proportionales sunt.

Sint enim in adjunctâ diagraphâ, arcuum ED & EC, secantes AF & AG; complementorum verò sinus AI & AH: Dico AF esse ad AG; ut AI ad AH. Nam per 20 octavi Euclidis: Similes plani sunt inter quos unus proportionalis medius intercidit. Sed inter secantes peripheriæ, & complementorum sinus, radius est medius proportionalis: quare AF, AI, item AG, AH, similes plani sunt. Sed per penultimam definitionem septimi Euclidis, Similes plani latera habent proportionalia: Ergo, ut AF ad AG; ita AI ad AH; quod erat demonstrandum.



21. Secans arcus æqualis est Tangenti dati, & semissis complementi.



Est arcus DE, secans AG, tangens GE: Complementi verò arcus BD, semissis BC (vel æqualis ei EF) tangens EH. Dico secantem AG, æqualē esse EG tangenti arcus dati, & EH semissis complementi. Angulus enim GAH, est æqualis angulo CAE ex thesi; angulus verò EAH est æqualis angulo BAC. Itaque angulus EHA, vel GHA, est prioris complementum, per trigesimam secundam primi elementorum:

B

& pro-

G E O M E T R I Æ

T R I A N G V L O R V M

L I B E R I I.

De Canonis Triangulorum Syntaxi.

1. **E**X superioris doctrinæ fundamentis, Canonem Triangulorum componere non est difficile, certis hypothesibus ad hoc assumptis.

Geometriæ Triangulorum pars secunda nobis posita fuit in Syntaxi Canonis Triangulorum, ea igitur hoc libro demonstranda est.

2. Canon Triangulorum est, qui in assumpta circuli, & dimetientis mensura, omnium circuli quadrantis partium, scrupulorumque primorū, Sinus, Tangentes, & Secantes continet.

Veteres (ut supra dictum) solis subtenfis utebantur, & proinde Triangulorum canonem appellabant eum, qui omnium semicirculi partium subtenfas continebat. Iam verò cum præter subtenfas & sinus, etiam tangentes, & secantes, circa circulum considerentur, sunt & eæ in Canonem Triangulorum referendæ.

3. Mensura circuli assumitur partium c c c l x, pars l x scrupula prima, unum scrupulum primum l x secunda potest; & ita deinceps.

Hæc circuli divisio est Ptolemæi, & recentiorum Mathematicorum; valde idonea ad numerationem: inter minores enim numeros nullus adeò multiplices partes habet, Vnciam, sextantem, quadrantem, trientem, quincuncem, semissem, septuncem, bessem, dodrantem, dextantem, deuncem, & assem. Retinenda igitur est, & ad eam aliæ proportionaliter accommodandæ sunt.

4. Dimetiens circuli statuitur particularum 20000000.

Ptolemæus diametrum assumit particularum 120: Arzabel 300. Neoterici 20000000 particularum eam statuunt: quæ mensura retinenda est; nam cum plurimum particularum sit, plenius diameter secatur, & proinde à multis subdivisionibus logista liberatur.

5. Qualium dimetiens statuitur particularum 20000000, talium latus sexanguli circulo inscripti est 10000000.

Nam per 15 quarti elementorum latus sexanguli circulo inscripti est æquale radio. Radius autem diametri semissis est, quare dimidiata diametri mensura 20000000, datur radius, & æquale ei Sexanguli latus, particularū 10000000.

6. Trianguli, 17320508 ferè.

Nam per 12 decimitertii Euclidis, Latus Trianguli circulo inscripti potentia est triplum radii: Radius autem est particularum, 10000000; ergo potentia ejus triplicata est particularum 300000000000000, & latus ejus 17320508 ferè.

7. Quadranguli 14142136.

Per sextam enim quarti elementorum, Recta quadrantem circuli subtendens, est latus quadranguli circulo inscripti: potest autem ea per penultimam primi elementorum duplum radii. Itaque potentia quadranguli est 200000000000000: & ejus latus 14142136.

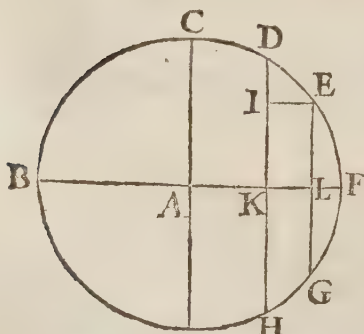
8. Decanguli 6180430.

Nam per nonam decimitertii Euclidis, decanguli latus, est segmentum minus rectæ lineæ extrema & mediocrate sectione, latus sexanguli & decanguli simul mensurantis. Itaque per undecimam secundi elementorum ablato semiradio 5000000, ex quadrato latere radii & semiradii aggregato 11180340: relinquitur decanguli latus 6180430.

9. Quinquanguli 11755704 ferè.

Nam per decimam decimitertii Euclidis, Latus quinquanguli in circulum inscripti, potest latus sexanguli & decanguli. Sed sexanguli latus est particularum 10000000, per quintam hujus: decanguli 6180430 per præmissam. Itaque per penultimam primi elementorum Quinquanguli latus est 11755704 ferè.

10. Quindecanguli 4158234 ferè.



Nam per decimam sextam quarti elementorum, recta inscripta inter basim Trianguli & Quinquanguli, ab eodem puncto in circulum ducti est latus Quindecanguli. Atqui talis est DE in adjuncta figura, inscripta inter basim Trianguli DH, & Quinquanguli EG, à B eodem puncto in circulum ducti: est ergo latus Quindecanguli. Hujus porro magnitudo investigatur hoc modo: datur DKH latus Trianguli per 6 hujus 17320508 ferè, & ELG

Quinquanguli latus per præmissum 11755704 ferè. Itaque per 7 primi Triangulorum DK est 8660254; EL 5877852, sinus recti peripheriarum FD & FE: & differentia eorum DL 2782402. Per 8 verò ejusdem AK est 5000000;

5000000; AL 8090170 *sinus recti complementorum* CD & CE: & *differentia eorum* KL vel IE 3090170. *Quare cum in Triangulo* DIE *rectangulo ad I, detur latus* DI 2782402, & IE 3090170: *per penultimam primi elementorum latus* DE *Quindecanguli est particularum* 4158234 *fere; quod erat demonstrandum.*

II. Si Trianguli, Quadranguli, Quinquanguli, Sexanguli, Decanguli, & tandem ipsius Quindecanguli laterum semiffes assumantur, ut angulorum dimidiorum sinus: & ex his complementorum singulorum, semiffiumque sinus continuè investigentur; & contra, totus sinuum Canon hac inductione componitur.

*Sint inscriptæ laterum
suprà inventæ.*

*Assumanturque horum semiffes,
ut angulorum dimidiorum
sinus per septimam primi
Triangulorum.*

Trianguli	120.	17320508	per 6	hujus.	Partium	60	8660254.
Quadranguli	90.	14142196	per 7			45	7071068.
Quinquanguli	72.	11755704	per 9			36	5877852.
Sexanguli,	60.	10000000	per 5			30	5000000.
Decanguli, &	36.	6180340	per 8			18	3090170.
Quindecanguli	24.	4158234	per 10			12	2079117.

Dico ex harum peripheriarum sinibus datis, reliquarum quadrantis peripheriarum sinus datum iri: Si continuè harum complementorum, semiffiumque sinus determinentur, & contra. Elementum veritatis suæ causam aliam non desiderat, quàm inductionem ab experientiâ factam, quæ in hoc genere sufficit, cum numeri sensibus subjecti sint. Assumatur igitur exempli gratiâ arcus partium 12, ejusque sinus 2079117; adhibeaturque præsentis elementi methodus, hinc sequentium peripheriarum sinus dabuntur.

Continuæ semiffes ex periph. partium 12 deductæ.	& earum sinus per 12 vel 13 primi hujus.	harumque com- plementa.	& sinus per 8 pri- mi hujus.
6	1045285.	84	9945219.
3	523360.	87	9986295.
1 30	261769.	88 30	9996573.
0 45	130896.	89 15	9999143.
		B 3	& horum

\& horum se- misses,	$\text{\& sinus per 12 vel}$ 13 primi hujus.	iterumque se- misses ho- rum,	\& sinus per 12 vel 13 primi hujus.
42	6691306.	33	5446390.
21	3583679.	16 30	2840153.
10 30	1822355.	8 15	1434926.
5 15	915016.	27 45	4656145.
43 30	6883546.	\& comple- menta,	$\text{\& sinus per 8 pri-}$ mi hujus.
21 45	3705574.	57	8386706.
44 15	6977905.	73 30	9588197.
harumque com- plementa,	$\text{\& sinus per 8 pri-}$ mi hujus.	81 45	9896514.
48	7431448.	62 15	8849876.
69	9339804.	horumque semisses,	$\text{\& sinus per 12 vel}$ 13 primi hujus.
79 30	9832549.	28 30	4771588.
84 45	9958049.	14 15	2461533.
46 30	7253744.	36 45	5983246.
68 15	9288096.	\& comple- menta,	$\text{\& sinus per 8 pri-}$ mi hujus.
45 45	7160319.	61 30	8788111.
rursusque horum semisses,	$\text{\& sinus per 12 vel}$ 13 primi hujus.	75 45	9692309.
24	4067366.	53 15	8012538.
34 30	5664062.	\& semissis peri- pheriæ 61,30,	$\text{\& sinus ejus per 12}$ $\text{vel 13 primi hujus.}$
17 15	2965416.	30 45	5112931.
39 45	6394390.	hujusque comple- mentum,	$\text{\& sinus per 8 pri-}$ mi hujus.
23 15	3947439.	59 15	8594064.
\& comple- menta,	$\text{\& sinus per 8 pri-}$ mi hujus.		
66	9135455.		
55 30	8241262.		
72 45	9550199.		
50 15	7688418.		
66 45	9187912.		

His verò sinibus inventis assumendum quoque est complementum arcus partium 12, nempe 78; & inde simili inductione semissium peripheriarum, complemento- rumque sinus continuè investigandi sunt. Quæ ratio si nō modò in hujus peripheriæ sinu, sed & reliquis supra inventis servetur, tandē maxima pars Canonis absolvetur.

Cæterum cū ad Canonem complendum etiam prioris scrupuli & sequentium aliquot sinus desiderentur, superest ut quomodo ex hujus Theorematis methodo, & ii

inve-

investigandi sint, paucis ostendamus. Assumatur igitur sinus partium $0, 45'$ supra inventus 130896: adhibitaque inductione superiori hujus semisses continuè investigentur per 12 vel 13 primi Triangul. Ita sequentiū peripheriarū sinus inveniuntur.

22'	36'	65449
11	15	32724 $\frac{1}{2}$

Porro cū ex his sinibus appareat eò usque pervenisse nos, ubi rectæ & curvæ differentia sensum prorsus evadit, tanquam una linea factarum, nullus error committetur, si æqua ratione reliquis peripheriis 22' 36' minoribus sinus rectus ejus 65449 accommodetur. Ita enim sinus scrupuli unius dabitur 2909 ferè, & scrupulorum 15', 43632; & ita deinceps. Ex his verò sinibus sinuum Canon perficietur. Si duplorum arcuum & complementorum sinus per decimam tertiam primi Triangulorum investigentur: & ex iis rursus semissium complementorūque continuè; dum totus sinuum Canon absolutus fuerit.

Hæc est sinuum Canonis condendi ratio, quæ cū ex superioris libri elementis deducta sit, ampliori demonstratione non est opus.

12. Ductis vero singulis totius quadrantis sinibus in radium, planisque figillatim in sinus complementorum divisīs, dantur singulæ totius circuli quadrantis peripheriarum tangentes, totiusque tangentium Canon hæc methodo completur.

Hujus elementi ratio ex decimasexta primi hujus manifesta est. Nam per eandem Tangens peripheriæ se habet ad radium; ut peripheriæ sinus rectus ad sinum complementi. Itaque cū sinuum Canon ex superiori doctrina compositus sit, componetur etiam tangentium Canon: multiplicatis singulis totius quadrantis sinibus in radium, planisque horum figillatim in complementorum sinuum sinus divisīs. Exempli gratia, datur sinus partium 30, 5000000, & complementi sui 8660254: ergo tangens partium 30 erit 5773502. Nam ut 8660254 ad 5000000; ita 10000000 se habet ad 5773502.

13. Secantium Canon componitur, radii quadrato in singulos totius circuli quadrantis sinus divisō, initio à sinuum Canonis fine factō.

Nam per vigesimam primi hujus, Radius media proportionē est ad peripheriæ sinum rectum, & secantem complementi. Itaque assumptis singulis totius quadrantis sinibus à fine Canonis, divisisque iis in radii quadratum; dantur totius quadrantis secantes: & proinde earum Canon hac viâ completur. In exemplo superiori, datur partium 30 sinus rectus 5000000, & quadratum radii 10000000000000: ergo secans partium 60 assumptæ scilicet peripheriæ complementi est 20000000. Nam ut 5000000 ad 10000000; ita 10000000 ad 20000000.

Atque

Atque hæc quidem methodus est Constructionis Canonis Sinuum, Tangentium, & Secantium, in quâ tamen spontè à nobis omiſſa ſunt compendia ſuperioris libri Theorematis 9, 21 & 22 demonſtrata. Nam cùm integer Triangulorum Canon ad manum eſſet, Sinuum quidem à præſtantiffimo Mathematico Ioanne Regiomontano, Tangentium ab Eraſmo Reinholdo, Secantium verò ab Ioachimo Rhethico compoſitus, latius iſta perſequi ſupervacuum duximus. Sufficit enim demonſtraſſe ex quibus fundamentis Canonis Triangul. conſtructio deducta, & qua methodo à præſtantiffimis artiſtibus completus ſit. Reliquus eſt Canonis uſus quem ſequenti theoremate proponimus.

14. Canon Triangulorum in fronte partes circuli quadrantis, in finiſtro margine, partium ſcrupula prima, in communi interſectione, partis ſcrupulique ſinus, tangentes vel ſecantes, cum differentia 60 ſcrupulis ſecundis competente completitur.

Canonis frons, vulgo tabule caput, ſuprema pars, aut tranſverſalis margo appellatur: continetque totius circuli quadrantis partes. Sinifter margo eſt in quo partium ſcrupula prima deſcripta ſunt. Communis interſectio, vel angulus eſt, in quo deſcendens & tranſverſalis ordo ſe mutuò interſecant. Differentia verò 60 ſecundis ſcrupulis competens, eſt exceſſus minoris ſinus, tangentis vel ſecantis, ſuper proximè maiorem.

Π Ο Ρ Ι Σ Μ Α Τ Α duo.

Itaque aſſumptæ partis, & primi ſcrupuli ſinus, tangens, vel ſecans in Canone eſt, quæ in angulo communi partis aſſumptæ, & ſcrupuli primi continetur: & contra.

In exemplo, ſinus partium 23 & ſcrupulorum primorum 28 eſt 3982155: Talis enim in angulo communi ſinuum canonis exhibetur. Viceverſa 3982155 ſinus eſt partium 23 28: Inventus enim ſinus in Canone, partes 23 in fronte, ſcrupula verò prima 28 oſtendit.

Parti vero & ſcrupulis primis, etiam ſecundis adhærentibus pars proportionalis differentiæ (quæ Lx ſcrupulis ſecundis competit) ſinui, tangenti, vel ſecanti proximè minori addita, aſſumptæ peripheriæ ſinum, tangentem, vel ſecantem componit; & contra.

Exempli gratiâ, ſinus partium 23, ſcrup. pr. 28, ſcrup. ſec. 30, eſt 3983489.
Nam

Nam proximè minor sinus in Canone invenitur, 3982155; & differentia scrupulis 60 secundis competens est 2668: ergo proportionalis pars 30 secundis tribuenda est 1334 (Nam per auream regulam, ut 60 ad 2668; ita 30 ad 1334) hæc autem sinui minori 3982155 adjecta componit 3983489, sinum peripheriæ 23-28-30 quæsitum. Viceversa peripheria sinus 3983489, ex sinuum Canone invenitur partium 23-28-30. Nam sinus proximè minor 3982155, competit arcui partium 23-28. Differentia verò hujus sinus & præcedentis dati est 1334: cui congruunt 30 scrupula secunda, (Nam ut 2668 differentia sexaginta scrupulis secundis competens, ad scrupula 60 secunda: ita 1334 ad 30 scrupula secunda) Itaque his ad arcum 23-28 proximè minorem adjectis, componitur peripheria partium 23-28-30, sinui proposito 3983489, correspondens. Et hic quidem Canonis usus. Iam ipsum Canonem subjicimus.

C A N O N S I N V V M

o Sinus			Tangens			Secans		
o	o	100000.00	o	Infinitum.	100000.00	Infinitum.	60	
1	29.09	99999.99	29.09	343774667.38	100000.00	343774681.93	59	
2	58.18	99999.98	58.18	171887319.15	100000.02	171887348.24	58	
3	87.27	99999.96	87.27	114591529.94	100000.04	114591573.57	57	
4	116.36	99999.93	116.36	85943630.48	100000.07	85943688.66	56	
5	145.44	99999.89	145.44	68754886.93	100000.11	68754959.66	55	
6	174.53	99999.84	174.53	57295721.34	100000.16	57295808.60	54	
7	203.62	99999.79	203.62	49110600.28	100000.21	49110702.09	53	
8	232.71	99999.73	232.71	42971757.06	100000.27	42971873.42	52	
9	261.80	99999.66	261.80	38197099.08	100000.34	38197229.98	51	
10	290.89	99999.58	290.89	34377370.74	100000.42	34377516.19	50	
11	319.98	99999.49	319.98	31252136.71	100000.51	31252296.70	49	
12	349.06	99999.39	349.07	28647773.40	100000.61	28647947.93	48	
13	378.15	99999.28	378.16	26444079.88	100000.72	26444268.95	47	
14	407.24	99999.17	407.25	24555198.33	100000.83	24555401.95	46	
15	436.33	99999.05	436.33	22918166.36	100000.95	22918384.53	45	
16	465.42	99998.92	465.42	21485762.18	100001.08	21485994.89	44	
17	494.51	99998.78	494.51	20221874.99	100001.22	20222122.25	43	
18	523.60	99998.63	523.60	19098418.64	100001.37	19098680.44	42	
19	552.68	99998.47	552.69	18093219.83	100001.53	18093496.17	41	
20	581.77	99998.30	581.78	17188539.93	100001.70	17188830.82	40	
21	610.86	99998.13	610.87	16370019.10	100001.87	16370324.53	39	
22	639.95	99997.95	639.96	15625908.37	100002.05	15626228.34	38	
23	669.04	99997.76	669.05	14946502.08	100002.24	14946836.60	37	
24	698.13	99997.56	698.14	14323712.17	100002.44	14324061.23	36	
25	727.21	99997.35	727.23	13750744.68	100002.65	13751108.29	35	
26	756.30	99997.13	756.32	13221850.86	100002.86	13222229.02	34	
27	785.39	99996.91	785.41	12732133.65	100003.08	12732526.35	33	
28	814.48	99996.68	814.50	12277395.54	100003.31	12277802.79	32	
29	843.57	99996.44	843.60	11854018.02	100003.55	11854439.81	31	
30	872.65	99996.19	872.69	11458865.01	100003.80	11459301.35	30	

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TANGENTIVM & SECANTIVM.

o	Sinus		Tangens		Secans		
30	872.65	99996.19	872.69	11458865.01	100003.80	11459301.35	30
31	901.74	99995.93	901.78	11089205.13	100004.06	11089656.01	29
32	930.83	99995.66	930.87	10742648.38	100004.33	10743113.80	28
33	959.92	99995.39	959.96	10417094.48	100004.61	10417574.45	27
34	989.00	99995.11	989.05	101110690.24	100004.89	10111184.75	26
35	1018.09	99994.82	1018.14	9821794.26	100005.18	9822303.32	25
36	1047.18	99994.52	1047.24	9548947.52	100005.48	9549471.12	24
37	1076.27	99994.21	1076.33	9290848.72	100005.79	9291386.87	23
38	1105.35	99993.89	1105.42	9046333.57	100006.11	9046886.26	22
39	1134.44	99993.56	1134.51	8814357.15	100006.44	8814924.39	21
40	1163.53	99993.23	1163.61	8593979.07	100006.77	8594560.86	20
41	1192.61	99992.89	1192.70	8384350.67	100007.11	8384947.00	19
42	1221.70	99992.54	1221.79	8184704.11	100007.46	8185314.98	18
43	1250.79	99992.18	1250.88	7994342.99	100007.82	7994968.41	17
44	1279.87	99991.81	1279.98	7812634.20	100008.19	7813274.16	16
45	1308.96	99991.43	1309.07	7639000.93	100008.57	7639655.44	15
46	1338.05	99991.04	1338.17	7472916.51	100008.96	7473585.56	14
47	1367.13	99990.65	1367.26	7313899.10	100009.35	7314582.70	13
48	1396.22	99990.25	1396.35	7161507.01	100009.75	7162205.15	12
49	1425.30	99989.84	1425.45	7015334.61	100010.16	7016047.35	11
50	1454.39	99989.42	1454.54	6875008.72	100010.58	6875735.95	10
51	1483.48	99988.99	1483.64	6740185.43	100011.01	6740927.20	9
52	1512.56	99988.55	1512.73	6610547.27	100011.45	6611303.59	8
53	1541.65	99988.11	1541.83	6485800.75	100011.89	6486571.62	7
54	1570.73	99987.66	1570.93	6365674.12	100012.34	6366459.53	6
55	1599.82	99987.20	1600.02	6249915.37	100012.80	6250715.33	5
56	1628.90	99986.73	1629.12	6138290.52	100013.27	6139105.02	4
57	1657.99	99986.25	1658.21	6030581.99	100013.75	6031411.04	3
58	1687.07	99985.76	1687.31	5926587.21	100014.24	5927430.81	2
59	1716.16	99985.27	1716.41	5826117.35	100014.73	5826975.49	1
60	1745.24	99984.77	1745.51	5728996.16	100015.23	5729868.85	0
C 2							89

I	Sinus	Tangens	Secans				
0	1745.24	99984.77	1745.51	5728996.16	100015.23	5729868.85	60
1	1774.32	99984.26	1774.60	5635058.96	100015.74	5635946.19	59
2	1803.41	99983.74	1803.70	5544151.67	100016.26	5545053.45	58
3	1832.49	99983.21	1832.80	5456130.03	100016.79	5457046.35	57
4	1861.58	99982.67	1861.90	5370858.75	100017.33	5371789.62	56
5	1890.66	99982.12	1891.00	5288210.91	100017.88	5289156.37	55
6	1919.74	99981.57	1920.10	5208067.26	100018.43	5209027.22	54
7	1948.83	99981.01	1949.20	5130315.66	100018.99	5131290.17	53
8	1977.91	99980.44	1978.30	5054850.59	100019.56	5055839.65	52
9	2006.99	99979.86	2007.40	4981572.64	100020.14	4982576.23	51
10	2036.08	99979.27	2036.50	4910388.06	100020.73	4911406.20	50
11	2065.16	99978.67	2065.60	4841208.41	100021.33	4842241.10	49
12	2094.24	99978.06	2094.70	4773950.14	100021.94	4774997.38	48
13	2123.32	99977.45	2123.80	4708534.30	100022.55	4709596.08	47
14	2152.41	99976.83	2152.91	4644886.20	100023.17	4645962.53	46
15	2181.49	99976.20	2182.01	4582935.12	100023.80	4584025.99	45
16	2210.57	99975.56	2211.11	4522614.07	100024.44	4523719.49	44
17	2239.65	99974.91	2240.21	4463859.56	100025.09	4464979.52	43
18	2268.73	99974.25	2269.32	4406611.32	100025.75	4407745.83	42
19	2297.81	99973.59	2298.42	4350812.16	100026.41	4351961.22	41
20	2326.90	99972.92	2327.53	4296407.73	100027.08	4297571.34	40
21	2355.98	99972.24	2356.63	4243346.39	100027.76	4244524.54	39
22	2385.06	99971.55	2385.74	4191578.99	100028.45	4192771.68	38
23	2414.14	99970.85	2414.84	4141058.76	100029.15	4142266.00	37
24	2443.22	99970.14	2443.95	4091741.16	100029.86	4092962.95	36
25	2472.30	99969.43	2473.05	4043583.75	100030.58	4044820.09	35
26	2501.38	99968.71	2502.16	3996546.05	100031.30	3997796.94	34
27	2530.46	99967.98	2531.27	3950589.46	100032.03	3951854.89	33
28	2559.54	99967.24	2560.38	3905677.11	100032.77	3906957.09	32
29	2588.62	99966.49	2589.48	3861773.81	100033.52	3863068.34	31
30	2617.69	99965.73	2618.59	3818845.93	100034.28	3820155.00	30

TANGENTIVM & SECANTIVM.

I	Sinus		Tangens		Secans		
30	2617.69	99965.73	2618.59	3818845.93	100034.28	3820155.00	30
31	2646.77	99964.96	2647.70	3776861.30	100035.05	3778184.92	29
32	2675.85	99964.19	2676.81	3735789.17	100035.82	3737127.34	28
33	2704.93	99963.41	2705.92	3695600.11	100036.60	3696952.82	27
34	2734.01	99962.62	2735.03	3656265.92	100037.39	3657633.18	26
35	2763.09	99961.82	2764.14	3617759.62	100038.19	3619141.43	25
36	2792.16	99961.01	2793.25	3580055.33	100039.00	3581451.68	24
37	2821.24	99960.19	2822.36	3543128.25	100039.82	3544539.15	23
38	2850.32	99959.36	2851.48	3506954.58	100040.65	3508380.03	22
39	2879.40	99958.53	2880.59	3471511.50	100041.48	3472951.50	21
40	2908.47	99957.69	2909.70	3436777.09	100042.32	3438231.63	20
41	2937.55	99956.84	2938.82	3402730.29	100043.17	3404199.39	19
42	2966.62	99955.98	2967.93	3369350.89	100044.03	3370834.53	18
43	2995.70	99955.11	2997.05	3336619.45	100044.90	3338117.63	17
44	3024.78	99954.24	3026.16	3304517.27	100045.78	3306030.00	16
45	3053.85	99953.36	3055.28	3273026.37	100046.67	3274553.65	15
46	3082.93	99952.47	3084.39	3242129.46	100047.56	3243671.29	14
47	3112.00	99951.57	3113.51	3211809.88	100048.46	3213366.26	13
48	3141.08	99950.66	3142.63	3182051.60	100049.37	3183622.52	12
49	3170.15	99949.74	3171.74	3152839.16	100050.29	3154424.63	11
50	3199.22	99948.81	3200.86	3124157.67	100051.22	3125757.70	10
51	3228.30	99947.88	3229.98	3095992.80	100052.15	3097607.37	9
52	3257.37	99946.94	3259.10	3068330.70	100053.09	3069959.82	8
53	3286.44	99945.99	3288.22	3041158.02	100054.05	3042801.69	7
54	3315.52	99945.03	3317.34	3014461.89	100055.01	3016120.10	6
55	3344.59	99944.06	3346.46	2988229.86	100055.98	2989902.63	5
56	3373.66	99943.08	3375.58	2962449.95	100056.96	2964137.26	4
57	3402.73	99942.09	3404.71	2937110.55	100057.95	2938812.41	3
58	3431.81	99941.09	3433.83	2912200.47	100058.94	2913916.88	2
59	3460.88	99940.09	3462.95	2887708.88	100059.94	2889439.84	1
60	3489.95	99939.08	3492.08	2863625.33	100060.95	2865370.83	0

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TANGENTIVM & SECANTIVM.

I	Sinus		Tangens		Secans		
30	2617.69	99965.73	2618.59	3818845.93	100034.28	3820155.00	30
31	2646.77	99964.96	2647.70	3776861.30	100035.05	3778184.92	29
32	2675.85	99964.19	2676.81	3735789.17	100035.82	3737127.34	28
33	2704.93	99963.41	2705.92	3695600.11	100036.60	3696952.82	27
34	2734.01	99962.62	2735.03	3656265.92	100037.39	3657633.18	26
35	2763.09	99961.82	2764.14	3617759.62	100038.19	3619141.43	25
36	2792.16	99961.01	2793.25	3580055.33	100039.00	3581451.68	24
37	2821.24	99960.19	2822.36	3543128.25	100039.82	3544539.15	23
38	2850.32	99959.36	2851.48	3506954.58	100040.65	3508380.03	22
39	2879.40	99958.53	2880.59	3471511.50	100041.48	3472951.50	21
40	2908.47	99957.69	2909.70	3436777.09	100042.32	3438231.63	20
41	2937.55	99956.84	2938.82	3402730.29	100043.17	3404199.39	19
42	2966.62	99955.98	2967.93	3369350.89	100044.03	3370834.53	18
43	2995.70	99955.11	2997.05	3336619.45	100044.90	3338117.63	17
44	3024.78	99954.24	3026.16	3304517.27	100045.78	3306030.00	16
45	3053.85	99953.36	3055.28	3273026.37	100046.67	3274553.65	15
46	3082.93	99952.47	3084.39	3242129.46	100047.56	3243671.29	14
47	3112.00	99951.57	3113.51	3211809.88	100048.46	3213366.26	13
48	3141.08	99950.66	3142.63	3182051.60	100049.37	3183622.52	12
49	3170.15	99949.74	3171.74	3152839.16	100050.29	3154424.63	11
50	3199.22	99948.81	3200.86	3124157.67	100051.22	3125757.70	10
51	3228.30	99947.88	3229.98	3095992.80	100052.15	3097607.37	9
52	3257.37	99946.94	3259.10	3068330.70	100053.09	3069959.82	8
53	3286.44	99945.99	3288.22	3041158.02	100054.05	3042801.69	7
54	3315.52	99945.03	3317.34	3014461.89	100055.01	3016120.10	6
55	3344.59	99944.06	3346.46	2988229.86	100055.98	2989902.63	5
56	3373.66	99943.08	3375.58	2962449.95	100056.96	2964137.26	4
57	3402.73	99942.09	3404.71	2937110.55	100057.95	2938812.41	3
58	3431.81	99941.09	3433.83	2912200.47	100058.94	2913916.88	2
59	3460.88	99940.09	3462.95	2887708.88	100059.94	2889439.84	1
60	3489.95	99939.08	3492.08	2863625.33	100060.95	2865370.83	0

C A N O N S I N V V M

2	Sinus		Tangens		Secans		
0	3489.95	99939.08	3492.08	2863625.33	100060.95	2865370.83	60
1	3519.02	99938.06	3521.20	2839939.69	100061.97	2841699.74	59
2	3548.09	99937.03	3550.33	2816642.18	100063.00	2818416.78	58
3	3577.16	99935.99	3579.45	2793723.33	100064.04	2795512.48	57
4	3606.23	99934.95	3608.58	2771173.99	100065.09	2772977.69	56
5	3635.30	99933.90	3637.71	2748985.28	100066.15	2750803.53	55
6	3664.37	99932.84	3666.83	2727148.61	100067.21	2728981.41	54
7	3693.44	99931.77	3695.96	2705655.68	100068.28	2707503.03	53
8	3722.51	99930.69	3725.09	2684498.43	100069.36	2686360.33	52
9	3751.58	99929.60	3754.22	2663669.04	100070.45	2665545.49	51
10	3780.65	99928.51	3783.35	2643159.96	100071.55	2645050.96	50
11	3809.71	99927.40	3812.48	2622963.84	100072.66	2624869.39	49
12	3838.78	99926.29	3841.61	2603073.58	100073.77	2604993.68	48
13	3867.85	99925.17	3870.74	2583482.27	100074.89	2585416.92	47
14	3896.91	99924.04	3899.88	2564183.23	100076.02	2566132.43	46
15	3925.98	99922.90	3929.01	2545169.96	100077.16	2547133.71	45
16	3955.05	99921.75	3958.14	2526436.15	100078.31	2528414.45	44
17	3984.11	99920.60	3987.28	2507975.68	100079.47	2509968.53	43
18	4013.18	99919.44	4016.41	2489782.62	100080.63	2491790.02	42
19	4042.24	99918.27	4045.55	2471851.19	100081.80	2473873.14	41
20	4071.31	99917.09	4074.69	2454175.78	100082.98	2456212.28	40
21	4100.37	99915.90	4103.83	2436750.95	100084.17	2438802.00	39
22	4129.44	99914.70	4132.96	2419571.40	100085.37	2421637.00	38
23	4158.50	99913.49	4162.10	2402631.99	100086.58	2404712.14	37
24	4187.57	99912.28	4191.24	2385927.72	100087.80	2388022.42	36
25	4216.63	99911.06	4220.38	2369453.72	100089.02	2371562.97	35
26	4245.69	99909.83	4249.52	2353205.25	100090.25	2355329.05	34
27	4274.75	99908.59	4278.66	2337177.72	100091.49	2339316.07	33
28	4303.82	99907.34	4307.81	2321366.65	100092.74	2323519.55	32
29	4332.88	99906.08	4336.95	2305767.67	100094.00	2307935.13	31
30	4361.94	99904.82	4366.09	2290376.55	100095.27	2292558.56	30

TANGENTIVM & SECANTIVM.

2	Sinus		Tangens		Secans		
30	4361.94	99904.82	4366.09	2290376.55	100095.27	2292558.56	30
31	4391.00	99903.55	4395.24	2275189.16	100096.55	2277385.72	29
32	4420.06	99902.27	4424.38	2260201.48	100097.83	2262412.59	28
33	4449.12	99900.98	4453.53	2245409.59	100099.12	2247635.25	27
34	4478.18	99899.68	4482.68	2230809.67	100100.42	2233049.89	26
35	4507.24	99898.37	4511.82	2216398.02	100101.73	2218652.78	25
36	4536.30	99897.05	4540.97	2202171.00	100103.05	2204440.32	24
37	4565.36	99895.73	4570.12	2188125.10	100104.38	2190408.97	23
38	4594.42	99894.40	4599.27	2174256.87	100105.71	2176555.29	22
39	4623.47	99893.06	4628.42	2160562.96	100107.05	2162875.93	21
40	4652.53	99891.71	4657.57	2147040.10	100108.40	2149367.63	20
41	4681.59	99890.35	4686.73	2133685.11	100109.76	2136027.19	19
42	4710.64	99888.98	4715.88	2120494.88	100111.13	2122851.51	18
43	4739.70	99887.61	4745.03	2107466.37	100112.51	2109837.55	17
44	4768.76	99886.23	4774.19	2094596.63	100113.90	2096982.36	16
45	4797.81	99884.84	4803.34	2081882.76	100115.30	2084283.05	15
46	4826.87	99883.44	4832.50	2069321.96	100116.70	2071736.80	14
47	4855.92	99882.03	4861.66	2056911.47	100118.11	2059340.86	13
48	4884.98	99880.61	4890.82	2044648.61	100119.53	2047092.55	12
49	4914.03	99879.18	4919.97	2032530.75	100120.96	2034989.25	11
50	4943.08	99877.75	4949.13	2020555.35	100122.40	2023028.40	10
51	4972.14	99876.31	4978.29	2008719.89	100123.85	2011207.50	9
52	5001.19	99874.86	5007.46	1997021.95	100125.30	1999524.11	8
53	5030.24	99873.40	5036.62	1985459.12	100126.76	1987975.84	7
54	5059.29	99871.93	5065.78	1974029.10	100128.23	1976560.36	6
55	5088.35	99870.45	5094.95	1962729.59	100129.71	1965275.41	5
56	5117.40	99868.97	5124.11	1951558.37	100131.20	1954118.74	4
57	5146.45	99867.48	5153.28	1940513.27	100132.70	1943088.20	3
58	5175.50	99865.98	5182.44	1929592.17	100134.20	1932181.65	2
59	5204.55	99864.47	5211.61	1918792.98	100135.71	1921397.01	1
60	5233.60	99862.95	5240.78	1908113.67	100137.23	1910732.26	0

3	Sinus		Tangens		Secans		
0	5233.60	99862.95	5240.78	1908113.67	100137.23	1910732.26	60
1	5262.64	99861.42	5269.95	1897552.26	100138.76	1900185.40	59
2	5291.69	99859.89	5299.12	1887106.80	100140.30	1889754.50	58
3	5320.74	99858.35	5328.29	1876775.39	100141.85	1879437.65	57
4	5349.79	99856.80	5357.46	1866556.18	100143.41	1869232.99	56
5	5378.83	99855.24	5386.63	1856447.34	100144.98	1859138.71	55
6	5407.88	99853.67	5415.81	1846447.09	100146.55	1849153.01	54
7	5436.93	99852.09	5444.98	1836553.70	100148.13	1839274.17	53
8	5465.97	99850.50	5474.16	1826765.44	100149.72	1829500.48	52
9	5495.02	99848.91	5503.33	1817080.67	100151.32	1819830.26	51
10	5524.06	99847.31	5532.51	1807497.74	100152.93	1810261.88	50
11	5553.11	99845.70	5561.69	1798015.05	100154.55	1800793.75	49
12	5582.15	99844.08	5590.87	1788631.04	100156.17	1791424.29	48
13	5611.19	99842.45	5620.05	1779344.17	100157.80	1782151.98	47
14	5640.24	99840.81	5649.23	1770152.94	100159.44	1772975.31	46
15	5669.28	99839.16	5678.41	1761055.88	100161.09	1763892.80	45
16	5698.32	99837.51	5707.59	1752051.55	100162.75	1754903.03	44
17	5727.36	99835.85	5736.78	1743138.54	100164.42	1746004.57	43
18	5756.40	99834.18	5765.96	1734315.46	100166.10	1737196.05	42
19	5785.44	99832.50	5795.15	1725580.95	100167.78	1728476.10	41
20	5814.48	99830.81	5824.34	1716933.69	100169.47	1719843.40	40
21	5843.52	99829.11	5853.52	1708372.38	100171.17	1711296.64	39
22	5872.56	99827.41	5882.71	1699895.74	100172.88	1702834.56	38
23	5901.60	99825.70	5911.90	1691502.51	100174.60	1694455.89	37
24	5930.64	99823.98	5941.09	1683191.48	100176.33	1686159.41	36
25	5959.67	99822.25	5970.29	1674961.44	100178.07	1677943.92	35
26	5988.71	99820.51	5999.48	1666811.20	100179.81	1669808.25	34
27	6017.75	99818.76	6028.67	1658739.62	100181.56	1661751.22	33
28	6046.78	99817.01	6057.87	1650745.55	100183.32	1653771.71	32
29	6075.82	99815.25	6087.06	1642827.89	100185.09	1645868.61	31
30	6104.85	99813.48	6116.26	1634985.55	100186.87	1638040.82	30

TANGENTIVM & SECANTIVM.

3	Sinus		Tangens		Secans		
30	6104.85	99813.48	6116.26	1634985.55	100186.87	1638040.82	30
31	6133.89	99811.70	6145.46	1627217.44	100188.66	1630287.28	29
32	6162.92	99809.91	6174.66	1619522.53	100190.46	1622606.93	28
33	6191.96	99808.11	6203.86	1611899.79	100192.26	1614998.74	27
34	6220.99	99806.30	6233.06	1604348.19	100194.07	1607461.70	26
35	6250.02	99804.49	6262.26	1596866.74	100195.89	1599994.81	25
36	6279.05	99802.67	6291.47	1589454.48	100197.72	1592597.11	24
37	6308.08	99800.84	6320.67	1582110.45	100199.56	1585267.64	23
38	6337.11	99799.00	6349.88	1574833.71	100201.41	1578005.45	22
39	6366.14	99797.15	6379.08	1567623.33	100203.26	1570809.63	21
40	6395.17	99795.29	6408.29	1560478.41	100205.12	1563679.27	20
41	6424.20	99793.43	6437.50	1553398.06	100206.99	1556613.48	19
42	6453.23	99791.56	6466.71	1546381.41	100208.87	1549611.39	18
43	6482.26	99789.68	6495.92	1539427.60	100210.76	1542672.15	17
44	6511.29	99787.79	6525.13	1532535.80	100212.66	1535794.90	16
45	6540.31	99785.89	6554.35	1525705.17	100214.57	1528978.83	15
46	6569.34	99783.98	6583.56	1518934.90	100216.49	1522223.12	14
47	6598.36	99782.06	6612.78	1512224.20	100218.41	1515526.98	13
48	6627.39	99780.14	6641.99	1505572.27	100220.34	1508889.61	12
49	6656.41	99778.21	6671.21	1498978.36	100222.28	1502310.26	11
50	6685.44	99776.27	6700.43	1492441.70	100224.23	1495788.16	10
51	6714.46	99774.32	6729.65	1485961.55	100226.19	1489322.58	9
52	6743.48	99772.36	6758.87	1479537.18	100228.16	1482912.77	8
53	6772.51	99770.39	6788.09	1473167.87	100230.13	1476558.02	7
54	6801.53	99768.42	6817.32	1466852.92	100232.11	1470257.63	6
55	6830.55	99766.44	6846.54	1460591.63	100234.10	1464010.90	5
56	6859.57	99764.45	6875.77	1454383.32	100236.10	1457817.15	4
57	6888.59	99762.45	6904.99	1448227.32	100238.11	1451676.71	3
58	6917.61	99760.44	6934.22	1442122.97	100240.13	1445585.92	2
59	6946.63	99758.42	6963.45	1436069.61	100242.16	1439547.13	1
60	6975.65	99756.40	6992.68	1430066.63	100244.19	1433558.70	C

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TANGENTIVM & SECANTIVM.

4	Sinus		Tangens		Secans		
30	7845.91	99691.73	7870.17	1270620.47	100309.22	1274549.48	30
31	7874.91	99689.44	7899.44	1265912.46	100311.52	1269856.04	29
32	7903.91	99687.15	7928.71	1261239.00	100313.83	1265197.15	28
33	7932.90	99684.85	7957.98	1256599.71	100316.15	1260572.42	27
34	7961.90	99682.54	7987.26	1251994.20	100318.48	1255981.48	26
35	7990.90	99680.22	8016.53	1247422.12	100320.81	1251423.97	25
36	8019.89	99677.89	8045.81	1242883.10	100323.15	1246899.52	24
37	8048.89	99675.55	8075.09	1238376.79	100325.50	1242407.77	23
38	8077.88	99673.20	8104.37	1233902.82	100327.86	1237948.37	22
39	8106.87	99670.85	8133.65	1229460.85	100330.23	1233520.97	21
40	8135.87	99668.49	8162.93	1225050.55	100332.61	1229125.23	20
41	8164.86	99666.12	8192.21	1220671.56	100335.00	1224760.82	19
42	8193.85	99663.74	8221.50	1216323.56	100337.40	1220427.39	18
43	8222.84	99661.35	8250.78	1212006.22	100339.80	1216124.62	17
44	8251.83	99658.95	8280.07	1207719.22	100342.21	1211852.18	16
45	8280.82	99656.55	8309.36	1203462.23	100344.63	1207609.76	15
46	8309.81	99654.14	8338.65	1199234.95	100347.06	1203397.05	14
47	8338.80	99651.72	8367.94	1195037.05	100349.50	1199213.72	13
48	8367.78	99649.29	8397.23	1190868.24	100351.95	1195059.48	12
49	8396.77	99646.85	8426.53	1186728.21	100354.41	1190934.02	11
50	8425.76	99644.40	8455.83	1182616.67	100356.87	1186837.05	10
51	8454.74	99641.94	8485.12	1178533.31	100359.34	1182768.27	9
52	8483.73	99639.48	8514.42	1174477.86	100361.82	1178727.39	8
53	8512.71	99637.01	8543.72	1170450.03	100364.31	1174714.12	7
54	8541.69	99634.53	8573.02	1166449.53	100366.81	1170728.19	6
55	8570.67	99632.04	8602.33	1162476.08	100369.32	1166769.32	5
56	8599.66	99629.54	8631.63	1158529.42	100371.84	1162837.23	4
57	8628.64	99627.03	8660.94	1154609.27	100374.36	1158931.65	3
58	8657.62	99624.52	8690.25	1150715.36	100376.89	1155052.31	2
59	8686.60	99622.00	8719.56	1146847.43	100379.43	1151198.96	1
60	8715.57	99619.47	8748.87	1143005.23	100381.98	1147371.32	0
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TANGENTIVM & SECANTIVM.

5	Sinus		Tangens		Secans		
30	9584.58	99539.62	9628.90	1038539.71	100462.51	1043343.05	30
31	9613.53	99536.83	9658.26	1035382.74	100465.33	1040200.66	29
32	9642.48	99534.03	9687.63	1032244.73	100468.16	1037077.23	28
33	9671.44	99531.22	9716.99	1029125.51	100470.99	1033972.59	27
34	9700.39	99528.40	9746.35	1026024.90	100473.83	1030886.56	26
35	9729.34	99525.57	9775.72	1022942.76	100476.68	1027818.99	25
36	9758.29	99522.74	9805.09	1019878.90	100479.54	1024769.71	24
37	9787.24	99519.90	9834.46	1016833.16	100482.41	1021738.55	23
38	9816.19	99517.05	9863.83	1013805.39	100485.29	1018725.36	22
39	9845.14	99514.19	9893.20	1010795.42	100488.18	1015729.98	21
40	9874.08	99511.32	9922.57	1007803.11	100491.08	1012752.24	20
41	9903.03	99508.44	9951.95	1004828.28	100493.99	1009792.00	19
42	9931.97	99505.55	9981.33	1001870.80	100496.90	1006849.09	18
43	9960.92	99502.66	10010.71	998930.50	100499.82	1003923.38	17
44	9989.86	99499.76	10040.09	996007.24	100502.75	1001014.70	16
45	10018.81	99496.85	10069.47	993100.88	100505.69	998122.91	15
46	10047.75	99493.93	10098.85	990211.25	100508.64	995247.87	14
47	10076.69	99491.00	10128.24	987338.23	100511.60	992389.43	13
48	10105.63	99488.06	10157.63	984481.66	100514.57	989547.44	12
49	10134.57	99485.12	10187.02	981641.40	100517.54	986721.76	11
50	10163.51	99482.17	10216.41	978817.32	100520.52	983912.27	10
51	10192.45	99479.21	10245.80	976009.27	100523.51	981118.80	9
52	10221.38	99476.24	10275.20	973217.13	100526.51	978341.24	8
53	10250.32	99473.26	10304.60	970440.75	100529.52	975579.44	7
54	10279.25	99470.27	10334.00	967680.00	100532.54	972833.27	6
55	10308.19	99467.28	10363.40	964934.75	100535.57	970102.60	5
56	10337.12	99464.28	10392.80	962204.86	100538.60	967387.30	4
57	10366.05	99461.27	10422.20	959490.22	100541.64	964687.24	3
58	10394.99	99458.25	10451.60	956790.68	100544.69	962002.29	2
59	10423.92	99455.22	10481.01	954106.13	100547.75	959332.33	1
60	10452.85	99452.18	10510.42	951436.45	100550.82	956677.22	0

6	Sinus		Tangens		Secans		
0	10452.85	99452.18	10510.42	951436.45	100550.82	956677.22	60
1	10481.78	99449.14	10539.83	948781.49	100553.90	954036.86	59
2	10510.70	99446.09	10569.24	946141.16	100556.99	951411.10	58
3	10539.63	99443.03	10598.66	943515.31	100560.09	948799.84	57
4	10568.56	99439.96	10628.08	940903.84	100563.20	946202.96	56
5	10597.48	99436.88	10657.50	938306.63	100566.31	943620.33	55
6	10626.41	99433.79	10686.92	935723.55	100569.43	941051.84	54
7	10655.33	99430.69	10716.34	933154.50	100572.56	938497.38	53
8	10684.25	99427.59	10745.76	930599.36	100575.70	935956.82	52
9	10713.18	99424.48	10775.19	928058.02	100578.85	933430.06	51
10	10742.10	99421.36	10804.62	925530.35	100582.01	930916.99	50
11	10771.02	99418.23	10834.05	923016.27	100585.18	928417.49	49
12	10799.94	99415.09	10863.48	920515.64	100588.35	925931.45	48
13	10828.85	99411.94	10892.91	918028.38	100591.53	923458.77	47
14	10857.77	99408.79	10922.34	915554.36	100594.72	920999.34	46
15	10886.69	99405.63	10951.78	913093.48	100597.92	918553.05	45
16	10915.60	99402.46	10981.22	910645.64	100601.13	916119.80	44
17	10944.52	99399.28	11010.66	908210.74	100604.35	913699.49	43
18	10973.43	99396.09	11040.10	905788.67	100607.58	911292.00	42
19	11002.34	99392.89	11069.54	903379.33	100610.81	908897.25	41
20	11031.26	99389.69	11098.99	900982.61	100614.05	906515.12	40
21	11060.17	99386.48	11128.44	898598.43	100617.30	904145.53	39
22	11089.08	99383.26	11157.89	896226.68	100620.56	901788.37	38
23	11117.99	99380.03	11187.34	893867.26	100623.83	899443.54	37
24	11146.89	99376.79	11216.79	891520.08	100627.11	897110.95	36
25	11175.80	99373.54	11246.25	889185.05	100630.40	894790.51	35
26	11204.71	99370.28	11275.71	886862.06	100633.70	892482.11	34
27	11233.61	99367.02	11305.17	884551.03	100637.01	890185.67	33
28	11262.52	99363.75	11334.63	882251.86	100640.32	887901.09	32
29	11291.42	99360.47	11364.09	879964.46	100643.64	885628.28	31
30	11320.32	99357.18	11393.56	877688.74	100646.97	883367.15	30

TANGENTIVM & SECANTIVM.

6	Sinus		Tangens		Secans	
30	11320.32	99357.18	11393.56	877688.74	100646.97	883367.15
31	11349.22	99353.88	11423.03	875424.61	100650.31	881117.61
32	11378.12	99350.58	11452.50	873171.98	100653.66	878879.57
33	11407.02	99347.27	11481.97	870930.77	100657.02	876652.95
34	11435.92	99343.95	11511.44	868700.88	100660.39	874437.66
35	11464.82	99340.62	11540.91	866482.23	100663.77	872233.61
36	11493.71	99337.28	11570.39	864274.75	100667.15	870040.71
37	11522.61	99333.93	11599.87	862078.33	100670.54	867858.89
38	11551.51	99330.57	11629.35	859892.90	100673.94	865688.05
39	11580.40	99327.20	11658.83	857718.38	100677.35	863528.12
40	11609.29	99323.83	11688.31	855554.68	100680.77	861379.01
41	11638.18	99320.45	11717.80	853401.72	100684.20	859240.65
42	11667.07	99317.06	11747.29	851259.43	100687.64	857112.95
43	11695.96	99313.66	11776.78	849127.72	100691.08	854995.84
44	11724.85	99310.25	11806.28	847006.51	100694.53	852889.23
45	11753.74	99306.84	11835.78	844895.73	100697.99	850793.04
46	11782.63	99303.42	11865.28	842795.31	100701.46	848707.21
47	11811.51	99299.99	11894.78	840705.15	100704.94	846631.65
48	11840.40	99296.55	11924.28	838625.19	100708.43	844566.29
49	11869.28	99293.10	11953.78	836555.36	100711.93	842511.05
50	11898.16	99289.64	11983.28	834495.57	100715.44	840465.86
51	11927.04	99286.17	12012.79	832445.77	100718.96	838430.65
52	11955.93	99282.70	12042.30	830405.86	100722.48	836405.34
53	11984.81	99279.22	12071.81	828375.79	100726.01	834389.86
54	12013.68	99275.73	12101.32	826355.47	100729.55	832384.15
55	12042.56	99272.23	12130.84	824344.85	100733.10	830388.12
56	12071.44	99268.72	12160.36	822343.84	100736.66	828401.71
57	12100.31	99265.21	12189.88	820352.39	100740.23	826424.85
58	12129.19	99261.69	12219.40	818370.41	100743.81	824457.48
59	12158.06	99258.16	12248.93	816397.86	100747.40	822499.52
60	12186.93	99254.62	12278.46	814434.64	100750.99	820550.90

CANON SIN VVM

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TANGENTIVM & SECANTIVM.

7	Sinus		Tangens		Secans		
30	13052.62	99144.49	13165.25	759575.41	100862.90	766129.76	30
31	13081.46	99140.69	13194.84	757871.79	100866.77	764440.75	29
32	13110.30	99136.88	13224.44	756175.67	100870.65	762759.23	28
33	13139.13	99133.06	13254.04	754486.99	100874.53	761085.16	27
34	13167.97	99129.23	13283.64	752805.71	100878.42	759418.49	26
35	13196.81	99125.39	13313.24	751131.78	100882.32	757759.16	25
36	13225.64	99121.55	13342.85	749465.14	100886.23	756107.13	24
37	13254.47	99117.70	13372.46	747805.76	100890.15	754462.36	23
38	13283.30	99113.84	13402.07	746153.57	100894.08	752824.78	22
39	13312.13	99109.97	13431.68	744508.55	100898.02	751194.37	21
40	13340.96	99106.09	13461.29	742870.64	100901.97	749571.06	20
41	13369.79	99102.21	13490.91	741239.78	100905.92	747954.82	19
42	13398.62	99098.32	13520.53	739615.95	100909.88	746345.60	18
43	13427.44	99094.42	13550.15	737999.09	100913.85	744743.35	17
44	13456.27	99090.51	13579.77	736389.16	100917.83	743148.03	16
45	13485.09	99086.59	13609.40	734786.10	100921.82	741559.59	15
46	13513.92	99082.66	13639.03	733189.89	100925.82	739977.98	14
47	13542.74	99078.72	13668.66	731600.47	100929.83	738403.18	13
48	13571.56	99074.78	13698.29	730017.80	100933.85	736835.12	12
49	13600.38	99070.83	13727.93	728441.84	100937.88	735273.77	11
50	13629.19	99066.87	13757.57	726872.55	100941.92	733719.09	10
51	13658.01	99062.90	13787.21	725309.87	100945.96	732171.02	9
52	13686.83	99058.92	13816.85	723753.78	100950.01	730629.54	8
53	13715.64	99054.93	13846.50	722204.22	100954.07	729094.60	7
54	13744.45	99050.94	13876.15	720661.16	100958.14	727566.16	6
55	13773.27	99046.94	13905.80	719124.56	100962.22	726044.17	5
56	13802.08	99042.93	13935.45	717594.37	100966.31	724528.59	4
57	13830.89	99038.91	13965.10	716070.56	100970.41	723019.40	3
58	13859.70	99034.88	13994.76	714553.08	100974.52	721516.53	2
59	13888.50	99030.84	14024.42	713041.90	100978.64	720019.96	1
60	13917.31	99026.80	14054.08	711536.97	100982.76	718529.65	0

CANON SINVVVM

[illegible]

8	Sinus		Tangens		Secans		
30	14780.94	98901.58	14945.10	669115.62	101110.61	676546.91	30
31	14809.71	98897.28	14974.84	667786.77	101115.01	675232.68	29
32	14838.48	98892.97	15004.58	666463.07	101119.42	673923.60	28
33	14867.24	98888.65	15034.33	665144.49	101123.84	672619.65	27
34	14896.01	98884.32	15064.08	663831.00	101128.27	671320.79	26
35	14924.77	98879.98	15093.83	662522.58	101132.71	670026.99	25
36	14953.53	98875.63	15123.58	661219.19	101137.15	668738.22	24
37	14982.30	98871.28	15153.33	659920.80	101141.60	667454.46	23
38	15011.06	98866.92	15183.09	658627.39	101146.06	666175.68	22
39	15039.81	98862.55	15212.85	657338.92	101150.53	664901.84	21
40	15068.57	98858.17	15242.61	656055.38	101155.01	663632.93	20
41	15097.33	98853.78	15272.38	654776.72	101159.50	662368.90	19
42	15126.08	98849.38	15302.15	653502.93	101164.00	661109.73	18
43	15154.84	98844.98	15331.92	652233.96	101168.51	659855.40	17
44	15183.59	98840.57	15361.89	650969.81	101173.03	658605.87	16
45	15212.34	98836.15	15391.47	649710.43	101177.56	657361.12	15
46	15241.09	98831.72	15421.25	648455.81	101182.09	656121.13	14
47	15269.84	98827.28	15451.03	647205.91	101186.63	654885.86	13
48	15298.58	98822.83	15480.82	645960.70	101191.18	653655.28	12
49	15327.33	98818.38	15510.61	644720.17	101195.74	652429.38	11
50	15356.07	98813.92	15540.40	643484.28	101200.31	651208.12	10
51	15384.82	98809.45	15570.19	642253.01	101204.89	649991.48	9
52	15413.56	98804.97	15599.98	641026.33	101209.48	648779.44	8
53	15442.30	98800.48	15629.78	639804.22	101214.08	647571.95	7
54	15471.04	98795.98	15659.58	638586.65	101218.69	646369.01	6
55	15499.78	98791.48	15689.38	637373.59	101223.31	645170.59	5
56	15528.51	98786.97	15719.19	636165.02	101227.93	643976.66	4
57	15557.25	98782.45	15749.00	634960.92	101232.56	642787.19	3
58	15585.98	98777.92	15778.81	633761.26	101237.20	641602.16	2
59	15614.72	98773.38	15808.62	632566.01	101241.85	640421.54	1
60	15643.45	98768.83	15838.44	631375.15	101246.51	639245.32	0

CANON SINVVVM

9	Sinus		Tangens		Secans		
0	15643.45	98768.83	15838.44	631375.15	101246.51	639245.32	60
1	15672.18	98764.28	15868.26	630188.66	101251.18	638073.47	59
2	15700.91	98759.72	15898.08	629006.51	101255.86	636905.95	58
3	15729.63	98755.15	15927.91	627828.68	101260.55	635742.76	57
4	15758.36	98750.57	15957.74	626655.14	101265.25	634583.86	56
5	15787.08	98745.98	15987.57	625485.88	101269.96	633429.23	55
6	15815.81	98741.38	16017.40	624320.86	101274.67	632278.84	54
7	15844.53	98736.77	16047.24	623160.07	101279.39	631132.69	53
8	15873.25	98732.16	16077.08	622003.47	101284.12	629990.73	52
9	15901.97	98727.54	16106.92	620851.06	101288.86	628852.95	51
10	15930.69	98722.91	16136.77	619702.79	101293.61	627719.33	50
11	15959.40	98718.27	16166.62	618558.67	101298.37	626589.84	49
12	15988.12	98713.62	16196.47	617418.65	101303.14	625464.46	48
13	16016.83	98708.97	16226.32	616282.72	101307.92	624343.16	47
14	16045.55	98704.31	16256.17	615150.85	101312.71	623225.94	46
15	16074.26	98699.64	16286.03	614023.03	101317.51	622112.75	45
16	16102.97	98694.96	16315.89	612899.23	101322.31	621003.59	44
17	16131.67	98690.27	16345.76	611779.43	101327.12	619898.43	43
18	16160.38	98685.57	16375.63	610663.60	101331.94	618797.25	42
19	16189.09	98680.86	16405.50	609551.74	101336.77	617700.03	41
20	16217.79	98676.15	16435.37	608443.81	101341.61	616606.74	40
21	16246.50	98671.43	16465.25	607339.79	101346.46	615517.36	39
22	16275.20	98666.70	16495.13	606239.67	101351.32	614431.89	38
23	16303.90	98661.96	16525.01	605143.43	101356.19	613350.28	37
24	16332.60	98657.21	16554.89	604051.03	101361.07	612272.53	36
25	16361.29	98652.46	16584.78	602962.47	101365.95	611198.61	35
26	16389.99	98647.70	16614.67	601877.72	101370.84	610128.50	34
27	16418.68	98642.93	16644.56	600796.76	101375.74	609062.19	33
28	16447.38	98638.15	16674.46	599719.57	101380.65	607999.64	32
29	16476.07	98633.36	16704.36	598646.14	101385.57	606940.85	31
30	16504.76	98628.56	16734.26	597576.44	101390.50	605885.80	30

TANGENTIVM & SECANTIVM.

9	Sinus		Tangens		Secans		
30	16504.76	98628.56	16734.26	597576.44	101390.50	605885.80	30
31	16533.45	98623.75	16764.16	596510.45	101395.44	604834.45	29
32	16562.14	98618.94	16794.07	595448.15	101400.39	603786.80	28
33	16590.82	98614.12	16823.98	594389.52	101405.35	602742.82	27
34	16619.51	98609.29	16853.89	593334.55	101410.32	601702.50	26
35	16648.19	98604.45	16883.81	592283.22	101415.30	600665.81	25
36	16676.87	98599.60	16913.73	591235.50	101420.29	599632.74	24
37	16705.55	98594.74	16943.65	590191.38	101425.29	598603.26	23
38	16734.23	98589.88	16973.58	589150.84	101430.29	597577.37	22
39	16762.91	98585.01	17003.51	588113.86	101435.30	596555.04	21
40	16791.59	98580.13	17033.44	587080.42	101440.32	595536.25	20
41	16820.26	98575.24	17063.37	586050.51	101445.35	594520.98	19
42	16848.94	98570.34	17093.31	585024.10	101450.39	593509.22	18
43	16877.61	98565.44	17123.25	584001.17	101455.44	592500.95	17
44	16906.28	98560.53	17153.19	582981.72	101460.50	591496.14	16
45	16934.95	98555.61	17183.14	581965.72	101465.57	590494.79	15
46	16963.62	98550.68	17213.09	580953.15	101470.64	589496.88	14
47	16992.28	98545.74	17243.04	579944.00	101475.72	588502.38	13
48	17020.95	98540.79	17273.00	578938.25	101480.81	587511.28	12
49	17049.61	98535.83	17302.96	577935.88	101485.91	586523.56	11
50	17078.28	98530.87	17332.92	576936.88	101491.02	585539.20	10
51	17106.94	98525.90	17362.88	575941.22	101496.14	584558.20	9
52	17135.60	98520.92	17392.85	574948.89	101501.27	583580.53	8
53	17164.25	98515.93	17422.82	573959.88	101506.41	582606.17	7
54	17192.91	98510.93	17452.79	572974.16	101511.56	581635.10	6
55	17221.56	98505.92	17482.77	571991.73	101516.72	580667.32	5
56	17250.22	98500.91	17512.75	571012.56	101521.89	579702.80	4
57	17278.87	98495.89	17542.73	570036.63	101527.07	578741.53	3
58	17307.52	98490.86	17572.72	569063.94	101532.26	577783.50	2
59	17336.17	98485.82	17602.71	568094.46	101537.46	576828.67	1
60	17364.82	98480.77	17632.70	567128.18	101542.67	575877.05	0

IO	Sinus		Tangens		Secans		
0	17364.82	98480.77	17632.70	567128.18	101542.67	575877.05	60
1	17393.46	98475.71	17662.69	566165.09	101547.88	574928.61	59
2	17422.11	98470.65	17692.69	565205.16	101553.10	573983.33	58
3	17450.75	98465.58	17722.69	564248.38	101558.33	573041.21	57
4	17479.39	98460.50	17752.69	563294.74	101563.57	572102.23	56
5	17508.03	98455.41	17782.70	562344.21	101568.82	571166.36	55
6	17536.67	98450.31	17812.71	561396.80	101574.08	570233.60	54
7	17565.31	98445.21	17842.72	560452.47	101579.35	569303.93	53
8	17593.95	98440.10	17872.74	559511.21	101584.63	568377.34	52
9	17622.58	98434.98	17902.76	558573.02	101589.92	567453.80	51
10	17651.21	98429.85	17932.78	557637.86	101595.21	566533.31	50
11	17679.84	98424.71	17962.81	556705.74	101600.51	565615.84	49
12	17708.47	98419.56	17992.84	555776.63	101605.82	564701.40	48
13	17737.10	98414.40	18022.87	554850.52	101611.14	563789.95	47
14	17765.73	98409.24	18052.91	553927.40	101616.47	562881.48	46
15	17794.35	98404.07	18082.95	553007.24	101621.81	561975.99	45
16	17822.98	98398.89	18112.99	552090.05	101627.16	561073.45	44
17	17851.60	98393.70	18143.03	551175.79	101632.52	560173.86	43
18	17880.22	98388.50	18173.08	550264.46	101637.89	559277.19	42
19	17908.84	98383.29	18203.13	549356.04	101643.27	558383.43	41
20	17937.46	98378.08	18233.18	548450.52	101648.66	557492.58	40
21	17966.07	98372.86	18263.24	547547.88	101654.06	556604.60	39
22	17994.69	98367.63	18293.30	546648.12	101659.46	555719.50	38
23	18023.30	98362.39	18323.36	545751.21	101664.87	554837.26	37
24	18051.91	98357.14	18353.43	544857.15	101670.29	553957.86	36
25	18080.52	98351.89	18383.50	543965.92	101675.72	553081.29	35
26	18109.13	98346.63	18413.57	543077.50	101681.16	552207.54	34
27	18137.74	98341.36	18443.65	542191.88	101686.61	551336.59	33
28	18166.35	98336.08	18473.73	541309.06	101692.07	550468.43	32
29	18194.95	98330.79	18503.81	540429.01	101697.54	549603.05	31
30	18223.55	98325.49	18533.90	539551.72	101703.02	548740.43	30

TANGENTIVM & SECANTIVM.

IO	Sinus		Tangens		Secans		
30	18223.55	98325.49	18533.90	539551.72	101703.02	548740.43	30
31	18252.15	98320.18	18563.99	538677.18	101708.51	547880.55	29
32	18280.75	98314.87	18594.08	537805.38	101714.01	547023.42	28
33	18309.35	98309.55	18624.18	536936.30	101719.52	546169.01	27
34	18337.95	98304.22	18654.28	536069.93	101725.04	545317.31	26
35	18366.54	98298.88	18684.38	535206.26	101730.56	544468.31	25
36	18395.13	98293.53	18714.49	534345.27	101736.09	543621.99	24
37	18423.73	98288.17	18744.60	533486.96	101741.63	542778.35	23
38	18452.32	98282.81	18774.71	532631.31	101747.18	541937.37	22
39	18480.91	98277.44	18804.83	531778.30	101752.74	541099.03	21
40	18509.49	98272.06	18834.95	530927.93	101758.31	540263.33	20
41	18538.08	98266.67	18865.07	530080.18	101763.89	539430.26	19
42	18566.66	98261.27	18895.20	529235.05	101769.48	538599.79	18
43	18595.24	98255.87	18925.33	528392.51	101775.08	537771.92	17
44	18623.82	98250.46	18955.46	527552.55	101780.69	536946.64	16
45	18652.40	98245.04	18985.59	526715.17	101786.31	536123.93	15
46	18680.98	98239.61	19015.73	525880.35	101791.94	535303.79	14
47	18709.56	98234.17	19045.87	525048.09	101797.58	534486.20	13
48	18738.13	98228.72	19076.02	524218.36	101803.22	533671.14	12
49	18766.70	98223.27	19106.17	523391.16	101808.87	532858.61	11
50	18795.27	98217.81	19136.32	522566.47	101814.53	532048.60	10
51	18823.84	98212.34	19166.48	521744.28	101820.20	531241.09	9
52	18852.41	98206.86	19196.64	520924.59	101825.88	530436.08	8
53	18880.98	98201.37	19226.80	520107.38	101831.57	529633.54	7
54	18909.54	98195.87	19256.96	519292.64	101837.27	528833.47	6
55	18938.11	98190.36	19287.13	518480.35	101842.98	528035.87	5
56	18966.67	98184.85	19317.30	517670.51	101848.70	527240.70	4
57	18995.23	98179.33	19347.48	516863.11	101854.43	526447.98	3
58	19023.79	98173.80	19377.66	516058.13	101860.17	525657.68	2
59	19052.34	98168.26	19407.84	515255.57	101865.92	524869.79	1
60	19080.90	98162.71	19438.03	514455.40	101871.68	524084.31	0

C A N O N S I N V V M

II	Sinus		Tangens		Secans		
0	19080.90	98162.71	19438.03	514455.40	101871.68	524084.31	60
1	19109.45	98157.16	19468.22	513657.63	101877.44	523301.21	59
2	19138.00	98151.60	19498.41	512862.24	101883.21	522520.50	58
3	19166.55	98146.03	19528.61	512069.21	101888.99	521742.16	57
4	19195.10	98140.45	19558.81	511278.55	101894.78	520966.18	56
5	19223.65	98134.86	19589.01	510490.24	101900.58	520192.54	55
6	19252.20	98129.26	19619.22	509704.26	101906.39	519421.25	54
7	19280.74	98123.66	19649.43	508920.61	101912.21	518652.28	53
8	19309.28	98118.05	19679.64	508139.28	101918.04	517885.63	52
9	19337.82	98112.43	19709.86	507360.25	101923.88	517121.28	51
10	19366.36	98106.80	19740.08	506583.52	101929.73	516359.24	50
11	19394.90	98101.16	19770.30	505809.07	101935.59	515599.48	49
12	19423.44	98095.51	19800.53	505036.90	101941.46	514841.99	48
13	19451.97	98089.86	19830.76	504267.00	101947.34	514086.77	47
14	19480.50	98084.20	19861.00	503499.35	101953.23	513333.81	46
15	19509.03	98078.53	19891.24	502733.95	101959.12	512583.09	45
16	19537.56	98072.85	19921.48	501970.78	101965.02	511834.61	44
17	19566.09	98067.16	19951.72	501209.84	101970.93	511088.35	43
18	19594.61	98061.46	19981.97	500451.11	101976.85	510344.31	42
19	19623.14	98055.76	20012.22	499694.59	101982.78	509602.48	41
20	19651.66	98050.05	20042.48	498940.27	101988.72	508862.84	40
21	19680.18	98044.33	20072.74	498188.13	101994.67	508125.39	39
22	19708.70	98038.60	20103.00	497438.17	102000.63	507390.12	38
23	19737.22	98032.86	20133.27	496690.37	102006.60	506657.01	37
24	19765.73	98027.11	20163.54	495944.74	102012.58	505926.06	36
25	19794.25	98021.36	20193.81	495201.25	102018.57	505197.26	35
26	19822.76	98015.60	20224.09	494459.90	102024.57	504470.60	34
27	19851.27	98009.83	20254.37	493720.68	102030.58	503746.07	33
28	19879.78	98004.05	20284.65	492983.58	102036.60	503023.67	32
29	19908.29	97998.26	20314.94	492248.59	102042.63	502303.37	31
30	19936.79	97992.47	20345.23	491515.70	102048.67	501585.17	30

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TANGENTIVM & SECANTIVM.

F

C A N O N S I N V V M

I 2	Sinus		Tangens		Secans		
0	20791.17	97814.76	21255.65	470463.01	102234.07	480973.43	60
1	20819.62	97808.71	21286.06	469791.00	102240.40	480316.13	59
2	20848.07	97802.65	21316.47	469120.83	102246.73	479660.66	58
3	20876.52	97796.58	21346.88	468452.48	102253.07	479007.02	57
4	20904.97	97790.50	21377.30	467785.95	102259.42	478355.20	56
5	20933.41	97784.41	21407.72	467121.24	102265.78	477705.19	55
6	20961.86	97778.32	21438.14	466458.32	102272.15	477056.99	54
7	20990.30	97772.22	21468.57	465797.21	102278.53	476410.58	53
8	21018.74	97766.11	21499.00	465137.88	102284.92	475765.96	52
9	21047.18	97759.99	21529.44	464480.34	102291.32	475123.12	51
10	21075.61	97753.86	21559.88	463824.57	102297.73	474482.06	50
11	21104.05	97747.73	21590.32	463170.56	102304.15	473842.77	49
12	21132.48	97741.59	21620.77	462518.32	102310.58	473205.23	48
13	21160.91	97735.44	21651.22	461867.83	102317.02	472569.45	47
14	21189.34	97729.28	21681.67	461219.08	102323.47	471935.42	46
15	21217.77	97723.11	21712.13	460572.07	102329.93	471303.13	45
16	21246.19	97716.93	21742.59	459926.80	102336.40	470672.56	44
17	21274.62	97710.75	21773.06	459283.25	102342.88	470043.72	43
18	21303.04	97704.56	21803.53	458641.41	102349.37	469416.60	42
19	21331.46	97698.36	21834.00	458001.29	102355.87	468791.19	41
20	21359.88	97692.15	21864.48	457362.87	102362.38	468167.48	40
21	21388.29	97685.93	21894.96	456726.14	102368.90	467545.48	39
22	21416.71	97679.70	21925.44	456091.11	102375.43	466925.16	38
23	21445.12	97673.47	21955.93	455457.76	102381.96	466306.52	37
24	21473.53	97667.23	21986.42	454826.08	102388.50	465689.56	36
25	21501.94	97660.98	22016.92	454196.08	102395.05	465074.27	35
26	21530.35	97654.72	22047.42	453567.73	102401.61	464460.64	34
27	21558.76	97648.45	22077.93	452941.05	102408.18	463848.67	33
28	21587.16	97642.17	22108.44	452316.01	102414.76	463238.35	32
29	21615.56	97635.89	22138.95	451692.61	102421.35	462629.67	31
30	21643.96	97629.60	22169.47	451070.85	102427.95	462022.63	30

TANGENTIVM & SECANTIVM.

12	Sinus		Tangens		Secans		
30	21643.96	97629.60	22169.47	451070.85	102427.95	462022.63	30
31	21672.36	97623.30	22199.99	450450.72	102434.56	461417.22	29
32	21700.76	97616.99	22230.51	449832.21	102441.18	460813.43	28
33	21729.15	97610.67	22261.04	449215.32	102447.81	460211.26	27
34	21757.54	97604.35	22291.57	448600.04	102454.45	459610.70	26
35	21785.93	97598.02	22322.11	447986.36	102461.10	459011.74	25
36	21814.32	97591.68	22352.65	447374.28	102467.76	458414.39	24
37	21842.71	97585.33	22383.19	446763.79	102474.43	457818.62	23
38	21871.10	97578.97	22413.74	446154.89	102481.11	457224.44	22
39	21899.48	97572.60	22444.29	445547.56	102487.80	456631.83	21
40	21927.86	97566.23	22474.85	444941.81	102494.49	456040.80	20
41	21956.24	97559.85	22505.41	444337.62	102501.19	455451.34	19
42	21984.62	97553.46	22535.97	443734.99	102507.90	454863.44	18
43	22013.00	97547.06	22566.54	443133.92	102514.62	454277.09	17
44	22041.37	97540.65	22597.11	442534.39	102521.35	453692.29	16
45	22069.74	97534.23	22627.69	441936.41	102528.09	453109.03	15
46	22098.11	97527.81	22658.27	441339.96	102534.84	452527.30	14
47	22126.48	97521.38	22688.85	440745.04	102541.60	451947.11	13
48	22154.85	97514.94	22719.44	440151.64	102548.37	451368.44	12
49	22183.21	97508.49	22750.03	439559.76	102555.15	450791.29	11
50	22211.58	97502.03	22780.63	438969.40	102561.94	450215.65	10
51	22239.94	97495.56	22811.23	438380.54	102568.74	449641.52	9
52	22268.30	97489.09	22841.83	437793.17	102575.55	449068.89	8
53	22296.66	97482.61	22872.44	437207.31	102582.37	448497.75	7
54	22325.01	97476.12	22903.05	436622.93	102589.20	447928.10	6
55	22353.37	97469.62	22933.67	436040.03	102596.04	447359.93	5
56	22381.72	97463.11	22964.29	435458.61	102602.89	446793.24	4
57	22410.07	97456.60	22994.92	434878.66	102609.75	446228.03	3
58	22438.41	97450.08	23025.55	434300.18	102616.62	445664.28	2
59	22466.76	97443.55	23056.18	433723.16	102623.50	445101.98	1
60	22495.11	97437.01	23086.82	433147.59	102630.39	444541.15	0

C A N O N S I N V V M

13	Sinus		Tangens		Secans		
0	22495.11	97437.01	23086.82	433147.59	102630.39	444541.15	60
1	22523.45	97430.46	23117.46	432573.47	102637.29	443981.76	59
2	22551.79	97423.90	23148.11	432000.79	102644.20	443423.82	58
3	22580.13	97417.34	23178.76	431429.55	102651.12	442867.31	57
4	22608.46	97410.77	23209.41	430859.74	102658.05	442312.24	56
5	22636.80	97404.19	23240.07	430291.36	102664.99	441758.59	55
6	22665.13	97397.60	23270.73	429724.40	102671.94	441206.37	54
7	22693.46	97391.00	23301.40	429158.85	102678.90	440655.56	53
8	22721.79	97384.39	23332.07	428594.72	102685.87	440106.16	52
9	22750.12	97377.78	23362.74	428031.99	102692.84	439558.17	51
10	22778.44	97371.16	23393.42	427470.66	102699.82	439011.58	50
11	22806.77	97364.53	23424.10	426910.72	102706.81	438466.38	49
12	22835.09	97357.89	23454.79	426352.18	102713.81	437922.57	48
13	22863.41	97351.24	23485.48	425795.01	102720.82	437380.15	47
14	22891.72	97344.58	23516.17	425239.23	102727.84	436839.10	46
15	22920.04	97337.92	23546.87	424684.82	102734.87	436299.43	45
16	22948.35	97331.25	23577.58	424131.77	102741.91	435761.13	44
17	22976.66	97324.57	23608.29	423580.09	102748.96	435224.19	43
18	23004.97	97317.88	23639.00	423029.77	102756.02	434688.61	42
19	23033.28	97311.18	23669.72	422480.80	102763.09	434154.38	41
20	23061.59	97304.48	23700.44	421933.18	102770.17	433621.50	40
21	23089.89	97297.77	23731.16	421386.90	102777.26	433089.96	39
22	23118.19	97291.05	23761.89	420841.96	102784.36	432559.77	38
23	23146.49	97284.32	23792.62	420298.35	102791.47	432030.90	37
24	23174.79	97277.58	23823.36	419756.06	102798.59	431503.36	36
25	23203.09	97270.84	23854.10	419215.10	102805.72	430977.15	35
26	23231.38	97264.09	23884.85	418675.46	102812.86	430452.25	34
27	23259.67	97257.33	23915.60	418137.13	102820.01	429928.67	33
28	23287.96	97250.56	23946.35	417600.11	102827.17	429406.40	32
29	23316.25	97243.78	23977.11	417064.40	102834.34	428885.43	31
30	23344.54	97236.99	24007.87	416529.98	102841.52	428365.76	30

TANGENTIVM & SECANTIVM.

13	Sinus		Tangens		Secans		
30	23344.54	97236.99	24007.87	416529.98	102841.52	428365.76	30
31	23372.82	97230.19	24038.64	415996.85	102848.71	427847.38	29
32	23401.10	97223.39	24069.41	415465.01	102855.91	427330.29	28
33	23429.38	97216.58	24100.19	414934.46	102863.12	426814.49	27
34	23457.66	97209.76	24130.97	414405.19	102870.34	426299.96	26
35	23485.94	97202.93	24161.76	413877.19	102877.57	425786.71	25
36	23514.21	97196.09	24192.55	413350.46	102884.81	425274.74	24
37	23542.48	97189.25	24223.34	412824.99	102892.06	424764.02	23
38	23570.75	97182.40	24254.14	412300.79	102899.32	424254.57	22
39	23599.02	97175.54	24284.94	411777.84	102906.58	423746.37	21
40	23627.29	97168.67	24315.75	411256.14	102913.85	423239.43	20
41	23655.55	97161.79	24346.56	410735.69	102921.13	422733.73	19
42	23683.81	97154.91	24377.37	410216.49	102928.42	422229.28	18
43	23712.07	97148.02	24408.19	409698.52	102935.72	421726.06	17
44	23740.33	97141.12	24439.01	409181.78	102943.03	421224.08	16
45	23768.59	97134.21	24469.84	408666.27	102950.35	420723.33	15
46	23796.84	97127.29	24500.67	408151.99	102957.68	420223.80	14
47	23825.10	97120.36	24531.51	407638.92	102965.02	419725.49	13
48	23853.35	97113.43	24562.35	407127.07	102972.37	419228.40	12
49	23881.59	97106.49	24593.20	406616.43	102979.73	418732.52	11
50	23909.84	97099.54	24624.05	406107.00	102987.10	418237.85	10
51	23938.08	97092.58	24654.91	405598.77	102994.48	417744.38	9
52	23966.33	97085.61	24685.77	405091.74	103001.87	417252.10	8
53	23994.57	97078.63	24716.63	404585.90	103009.27	416761.02	7
54	24022.80	97071.65	24747.50	404081.25	103016.68	416271.14	6
55	24051.04	97064.66	24778.37	403577.79	103024.10	415782.43	5
56	24079.27	97057.66	24809.25	403075.50	103031.53	415294.91	4
57	24107.51	97050.65	24840.13	402574.40	103038.97	414808.56	3
58	24135.74	97043.63	24871.02	402074.46	103046.42	414323.39	2
59	24163.96	97036.60	24901.91	401575.70	103053.88	413839.39	1
60	24192.19	97029.57	24932.80	401078.09	103061.35	413356.55	0

C A N O N S I N V V M

14	Sinus		Tangens		Secans		
0	24192.19	97029.57	24932.80	401078.09	103061.35	413356.55	60
1	24220.41	97022.53	24963.70	400581.65	103068.83	412874.87	59
2	24248.63	97015.48	24994.60	400086.36	103076.32	412394.35	58
3	24276.85	97008.42	25025.51	399592.23	103083.82	411914.98	57
4	24305.07	97001.35	25056.42	399099.24	103091.33	411436.75	56
5	24333.29	96994.28	25087.34	398607.39	103098.85	410959.67	55
6	24361.50	96987.20	25118.26	398116.69	103106.38	410483.74	54
7	24389.71	96980.11	25149.19	397627.12	103113.92	410008.93	53
8	24417.92	96973.01	25180.12	397138.68	103121.47	409535.26	52
9	24446.13	96965.90	25211.06	396651.37	103129.03	409062.72	51
10	24474.33	96958.79	25242.00	396165.18	103136.60	408591.30	50
11	24502.54	96951.67	25272.94	395680.11	103144.18	408121.00	49
12	24530.74	96944.54	25303.89	395196.15	103151.77	407651.81	48
13	24558.94	96937.40	25334.84	394713.31	103159.36	407183.74	47
14	24587.13	96930.25	25365.80	394231.57	103166.97	406716.77	46
15	24615.33	96923.09	25396.76	393750.94	103174.59	406250.91	45
16	24643.52	96915.92	25427.73	393271.41	103182.22	405786.15	44
17	24671.71	96908.75	25458.70	392792.97	103189.85	405322.49	43
18	24699.90	96901.57	25489.68	392315.63	103197.50	404859.92	42
19	24728.09	96894.38	25520.66	391839.37	103205.16	404398.44	41
20	24756.27	96887.18	25551.65	391364.20	103212.82	403938.04	40
21	24784.45	96879.98	25582.64	390890.11	103220.50	403478.72	39
22	24812.63	96872.77	25613.63	390417.10	103228.18	403020.48	38
23	24840.81	96865.55	25644.63	389945.16	103235.88	402563.32	37
24	24868.99	96858.32	25675.63	389474.29	103243.59	402107.22	36
25	24897.16	96851.08	25706.64	389004.48	103251.30	401652.19	35
26	24925.33	96843.83	25737.66	388535.74	103259.03	401198.23	34
27	24953.50	96836.57	25768.68	388068.05	103266.76	400745.32	33
28	24981.67	96829.31	25799.70	387601.42	103274.51	400293.47	32
29	25009.84	96822.04	25830.73	387135.84	103282.27	399842.67	31
30	25038.00	96814.76	25861.76	386671.31	103290.03	399392.92	30

TANGENTIVM & SECANTIVM.

14	Sinus		Tangens		Secans		
30	25038.00	96814.76	25861.76	386671.31	103290.03	399392.92	30
31	25066.16	96807.47	25892.80	386207.82	103297.81	398944.21	29
32	25094.32	96800.18	25923.84	385745.37	103305.59	398496.54	28
33	25122.48	96792.88	25954.88	385283.96	103313.39	398049.91	27
34	25150.63	96785.57	25985.93	384823.58	103321.19	397604.31	26
35	25178.79	96778.25	26016.99	384364.24	103329.01	397159.75	25
36	25206.94	96770.92	26048.05	383905.91	103336.83	396716.21	24
37	25235.08	96763.58	26079.11	383448.61	103344.67	396273.69	23
38	25263.23	96756.23	26110.18	382992.33	103352.51	395832.19	22
39	25291.37	96748.88	26141.26	382537.07	103360.37	395391.71	21
40	25319.52	96741.52	26172.34	382082.81	103368.23	394952.24	20
41	25347.66	96734.15	26203.42	381629.57	103376.11	394513.79	19
42	25375.79	96726.77	26234.51	381177.33	103383.99	394076.33	18
43	25403.93	96719.38	26265.60	380726.09	103391.88	393639.88	17
44	25432.06	96711.99	26296.70	380275.85	103399.79	393204.43	16
45	25460.19	96704.59	26327.80	379826.61	103407.70	392769.97	15
46	25488.32	96697.18	26358.91	379378.35	103415.63	392336.51	14
47	25516.45	96689.76	26390.02	378931.09	103423.56	391904.03	13
48	25544.58	96682.33	26421.14	378484.81	103431.51	391472.54	12
49	25572.70	96674.90	26452.26	378039.51	103439.46	391042.03	11
50	25600.82	96667.46	26483.39	377595.19	103447.43	390612.50	10
51	25628.94	96660.01	26514.52	377151.85	103455.40	390183.95	9
52	25657.05	96652.55	26545.66	376709.47	103463.38	389756.37	8
53	25685.17	96645.08	26576.80	376268.07	103471.38	389329.76	7
54	25713.28	96637.60	26607.94	375827.63	103479.38	388904.11	6
55	25741.39	96630.12	26639.09	375388.15	103487.40	388479.43	5
56	25769.50	96622.63	26670.25	374949.63	103495.42	388055.70	4
57	25797.60	96615.13	26701.41	374512.07	103503.46	387632.93	3
58	25825.70	96607.62	26732.57	374075.46	103511.50	387211.12	2
59	25853.81	96600.10	26763.74	373639.80	103519.55	386790.25	1
60	25881.90	96592.58	26794.92	373205.08	103527.62	386370.33	0

C A N O N S I N V V M

15	Sinus		Tangens		Secans		
0	25881.90	96592.58	26794.92	373205.08	103527.62	386370.33	60
1	25910.00	96585.05	26826.10	372771.31	103535.69	385951.35	59
2	25938.10	96577.51	26857.28	372338.47	103543.78	385533.32	58
3	25966.19	96569.96	26888.47	371906.58	103551.87	385116.22	57
4	25994.28	96562.40	26919.67	371475.61	103559.98	384700.05	56
5	26022.37	96554.83	26950.87	371045.58	103568.09	384284.82	55
6	26050.45	96547.26	26982.07	370616.48	103576.21	383870.51	54
7	26078.53	96539.68	27013.28	370188.30	103584.35	383457.13	53
8	26106.61	96532.09	27044.49	369761.03	103592.49	383044.67	52
9	26134.69	96524.49	27075.71	369334.69	103600.65	382633.13	51
10	26162.77	96516.88	27106.93	368909.27	103608.81	382222.51	50
11	26190.85	96509.27	27138.16	368484.75	103616.99	381812.80	49
12	26218.92	96501.65	27169.40	368061.15	103625.17	381403.99	48
13	26246.99	96494.02	27200.64	367638.45	103633.37	380996.10	47
14	26275.06	96486.38	27231.88	367216.65	103641.57	380589.11	46
15	26303.12	96478.73	27263.13	366795.75	103649.79	380183.01	45
16	26331.18	96471.07	27294.38	366375.75	103658.01	379777.82	44
17	26359.24	96463.41	27325.64	365956.65	103666.25	379373.52	43
18	26387.30	96455.74	27356.90	365538.44	103674.49	378970.11	42
19	26415.36	96448.06	27388.17	365121.11	103682.75	378567.60	41
20	26443.42	96440.37	27419.44	364704.67	103691.01	378165.96	40
21	26471.47	96432.67	27450.72	364289.11	103699.29	377765.22	39
22	26499.52	96424.97	27482.01	363874.44	103707.57	377365.35	38
23	26527.57	96417.26	27513.30	363460.64	103715.87	376966.36	37
24	26555.61	96409.54	27544.59	363047.71	103724.17	376568.24	36
25	26583.65	96401.81	27575.89	362635.66	103732.49	376171.00	35
26	26611.69	96394.07	27607.19	362224.47	103740.82	375774.62	34
27	26639.73	96386.33	27638.50	361814.15	103749.15	375379.11	33
28	26667.77	96378.58	27669.81	361404.69	103757.50	374984.47	32
29	26695.81	96370.82	27701.13	360996.09	103765.85	374590.68	31
30	26723.84	96363.05	27732.45	360588.35	103774.22	374197.75	30

TANGENTIVM & SECANTIVM.

15	Sinus		Tangens		Secans		
30	26723.84	96363.05	27732.45	360588.35	103774.22	374197.75	30
31	26751.87	96355.27	27763.78	360181.46	103782.60	373805.68	29
32	26779.89	96347.48	27795.12	359775.43	103790.98	373414.46	28
33	26807.92	96339.69	27826.46	359370.24	103799.38	373024.09	27
34	26835.94	96331.89	27857.80	358965.90	103807.79	372634.57	26
35	26863.96	96324.08	27889.15	358562.41	103816.21	372245.89	25
36	26891.98	96316.26	27920.50	358159.75	103824.63	371858.05	24
37	26920.00	96308.43	27951.86	357757.94	103833.07	371471.05	23
38	26948.01	96300.59	27983.22	357356.96	103841.52	371084.89	22
39	26976.02	96292.75	28014.59	356956.81	103849.98	370699.56	21
40	27004.03	96284.90	28045.97	356557.49	103858.44	370315.06	20
41	27032.04	96277.04	28077.35	356159.00	103866.92	369931.39	19
42	27060.04	96269.17	28108.73	355761.33	103875.41	369548.54	18
43	27088.05	96261.30	28140.12	355364.49	103883.91	369166.52	17
44	27116.05	96253.42	28171.52	354968.46	103892.42	368785.32	16
45	27144.04	96245.53	28202.92	354573.25	103900.94	368404.93	15
46	27172.04	96237.63	28234.32	354178.86	103909.47	368025.36	14
47	27200.03	96229.72	28265.73	353785.28	103918.00	367646.60	13
48	27228.02	96221.80	28297.15	353392.51	103926.55	367268.65	12
49	27256.01	96213.87	28328.57	353000.54	103935.11	366891.51	11
50	27284.00	96205.94	28359.99	352609.38	103943.68	366515.18	10
51	27311.98	96198.00	28391.42	352219.02	103952.26	366139.64	9
52	27339.96	96190.05	28422.86	351829.46	103960.85	365764.91	8
53	27367.94	96182.09	28454.30	351440.70	103969.45	365390.97	7
54	27395.92	96174.13	28485.75	351052.73	103978.06	365017.83	6
55	27423.90	96166.16	28517.20	350665.55	103986.69	364645.48	5
56	27451.87	96158.18	28548.66	350279.16	103995.32	364273.92	4
57	27479.84	96150.19	28580.12	349893.56	104003.96	363903.15	3
58	27507.81	96142.19	28611.59	349508.74	104012.61	363533.16	2
59	27535.78	96134.18	28643.06	349124.70	104021.27	363163.95	1
60	27563.74	96126.17	28674.54	348741.44	104029.94	362795.53	0

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C A N O N S I N V V M

16	Sinus		Tangens		Secans		
0	27563.74	96126.17	28674.54	348741.44	104029.94	362795.53	60
1	27591.70	96118.15	28706.02	348358.96	104038.63	362427.88	59
2	27619.65	96110.12	28737.51	347977.26	104047.32	362061.01	58
3	27647.61	96102.08	28769.00	347596.32	104056.02	361694.90	57
4	27675.56	96094.03	28800.50	347216.16	104064.73	361329.57	56
5	27703.52	96085.98	28832.01	346836.76	104073.46	360965.01	55
6	27731.47	96077.92	28863.52	346458.13	104082.19	360601.21	54
7	27759.41	96069.85	28895.03	346080.26	104090.94	360238.18	53
8	27787.36	96061.77	28926.55	345703.15	104099.69	359875.90	52
9	27815.30	96053.68	28958.08	345326.79	104108.45	359514.39	51
10	27843.24	96045.58	28989.61	344951.20	104117.23	359153.63	50
11	27871.18	96037.48	29021.14	344576.35	104126.01	358793.62	49
12	27899.11	96029.37	29052.68	344202.26	104134.81	358434.37	48
13	27927.04	96021.25	29084.23	343828.91	104143.62	358075.86	47
14	27954.97	96013.12	29115.78	343456.31	104152.43	357718.10	46
15	27982.90	96004.98	29147.34	343084.46	104161.26	357361.08	45
16	28010.83	95996.84	29178.90	342713.34	104170.09	357004.81	44
17	28038.75	95988.69	29210.47	342342.97	104178.94	356649.28	43
18	28066.67	95980.53	29242.05	341973.33	104187.80	356294.48	42
19	28094.59	95972.36	29273.63	341604.43	104196.67	355940.42	41
20	28122.51	95964.18	29305.21	341236.26	104205.54	355587.10	40
21	28150.42	95956.00	29336.80	340868.82	104214.43	355234.50	39
22	28178.33	95947.81	29368.39	340502.10	104223.33	354882.63	38
23	28206.24	95939.61	29399.99	340136.12	104232.24	354531.49	37
24	28234.15	95931.40	29431.60	339770.85	104241.16	354181.07	36
25	28262.05	95923.18	29463.21	339406.31	104250.09	353831.38	35
26	28289.95	95914.95	29494.83	339042.49	104259.03	353482.40	34
27	28317.85	95906.72	29526.45	338679.38	104267.98	353134.14	33
28	28345.75	95898.48	29558.08	338316.99	104276.94	352786.60	32
29	28373.64	95890.23	29589.71	337955.31	104285.91	352439.77	31
30	28401.53	95881.97	29621.35	337594.34	104294.89	352093.65	30

T A N G E N T I V M & S E C A N T I V M.

16	Sinus		Tangens		Secans		
30	28401.53	95881.97	29621.35	337594.34	104294.89	352093.65	30
31	28429.42	95873.70	29652.99	337234.08	104303.88	351748.24	29
32	28457.31	95865.43	29684.64	336874.53	104312.89	351403.54	28
33	28485.20	95857.15	29716.30	336515.68	104321.90	351059.54	27
34	28513.08	95848.86	29747.96	336157.53	104330.92	350716.25	26
35	28540.96	95840.56	29779.62	335800.08	104339.95	350373.65	25
36	28568.84	95832.25	29811.29	335443.33	104349.00	350031.75	24
37	28596.71	95823.94	29842.97	335087.28	104358.05	349690.55	23
38	28624.58	95815.62	29874.65	334731.91	104367.12	349350.04	22
39	28652.45	95807.29	29906.34	334377.24	104376.19	349010.23	21
40	28680.32	95798.95	29938.03	334023.26	104385.28	348671.10	20
41	28708.19	95790.60	29969.73	333669.97	104394.37	348332.67	19
42	28736.05	95782.25	30001.44	333317.36	104403.48	347994.92	18
43	28763.91	95773.89	30033.15	332965.43	104412.59	347657.85	17
44	28791.77	95765.52	30064.86	332614.19	104421.72	347321.46	16
45	28819.63	95757.14	30096.58	332263.62	104430.86	346985.76	15
46	28847.48	95748.75	30128.31	331913.73	104440.01	346650.73	14
47	28875.33	95740.35	30160.04	331564.52	104449.17	346316.37	13
48	28903.18	95731.95	30191.78	331215.98	104458.33	345982.69	12
49	28931.03	95723.54	30223.52	330868.11	104467.51	345649.69	11
50	28958.87	95715.12	30255.27	330520.91	104476.70	345317.35	10
51	28986.71	95706.69	30287.03	330174.38	104485.90	344985.68	9
52	29014.55	95698.25	30318.79	329828.51	104495.11	344654.67	8
53	29042.39	95689.81	30350.55	329483.30	104504.33	344324.33	7
54	29070.22	95681.36	30382.32	329138.76	104513.57	343994.65	6
55	29098.05	95672.90	30414.10	328794.87	104522.81	343665.63	5
56	29125.88	95664.43	30445.88	328451.64	104532.06	343337.27	4
57	29153.71	95655.95	30477.67	328109.07	104541.32	343009.56	3
58	29181.53	95647.47	30509.46	327767.15	104550.60	342682.51	2
59	29209.35	95638.98	30541.26	327425.88	104559.88	342356.11	1
60	29237.17	95630.48	30573.07	327085.26	104569.18	342030.36	0

17	Sinus		Tangens		Secans		
0	29237.17	95630.48	30573.07	327085.26	104569.18	342030.36	60
1	29264.99	95621.97	30604.88	326745.29	104578.48	341705.26	59
2	29292.80	95613.45	30636.69	326405.96	104587.80	341380.80	58
3	29320.61	95604.92	30668.51	326067.28	104597.12	341056.99	57
4	29348.42	95596.39	30700.34	325729.24	104606.46	340733.82	56
5	29376.23	95587.85	30732.18	325391.84	104615.81	340411.30	55
6	29404.03	95579.30	30764.02	325055.08	104625.16	340089.41	54
7	29431.83	95570.74	30795.86	324718.95	104634.53	339768.16	53
8	29459.63	95562.17	30827.71	324383.46	104643.91	339447.54	52
9	29487.43	95553.60	30859.57	324048.60	104653.30	339127.55	51
10	29515.22	95545.02	30891.43	323714.38	104662.70	338808.20	50
11	29543.01	95536.43	30923.30	323380.78	104672.11	338489.48	49
12	29570.80	95527.83	30955.17	323047.80	104681.53	338171.38	48
13	29598.59	95519.22	30987.05	322715.46	104690.96	337853.91	47
14	29626.38	95510.61	31018.93	322383.73	104700.40	337537.07	46
15	29654.16	95501.99	31050.82	322052.63	104709.86	337220.84	45
16	29681.94	95493.36	31082.72	321722.15	104719.32	336905.24	44
17	29709.71	95484.72	31114.62	321392.28	104728.79	336590.26	43
18	29737.49	95476.07	31146.53	321063.04	104738.28	336275.89	42
19	29765.26	95467.42	31178.44	320734.40	104747.77	335962.14	41
20	29793.03	95458.76	31210.36	320406.38	104757.28	335649.00	40
21	29820.79	95450.09	31242.29	320078.97	104766.79	335336.47	39
22	29848.56	95441.41	31274.22	319752.17	104776.32	335024.55	38
23	29876.32	95432.72	31306.16	319425.98	104785.86	334713.24	37
24	29904.08	95424.03	31338.10	319100.39	104795.40	334402.54	36
25	29931.84	95415.33	31370.05	318775.40	104804.96	334092.44	35
26	29959.59	95406.62	31402.00	318451.02	104814.53	333782.94	34
27	29987.34	95397.90	31433.96	318127.24	104824.11	333474.05	33
28	30015.09	95389.17	31465.93	317804.06	104833.70	333165.75	32
29	30042.84	95380.43	31497.90	317481.47	104843.30	332858.05	31
30	30070.58	95371.69	31529.88	317159.48	104852.91	332550.95	30

TANGENTIVM & SECANTIVM.

17	Sinus		Tangens		Secans		
30	30070.58	95371.69	31529.88	317159.48	104852.91	332550.95	30
31	30098.32	95362.94	31561.86	316838.08	104862.53	332244.44	29
32	30126.06	95354.18	31593.85	316517.28	104872.17	331938.53	28
33	30153.80	95345.41	31625.85	316197.06	104881.81	331633.20	27
34	30181.53	95336.64	31657.85	315877.44	104891.46	331328.47	26
35	30209.26	95327.86	31689.86	315558.40	104901.13	331024.32	25
36	30236.99	95319.07	31721.87	315239.94	104910.80	330720.76	24
37	30264.71	95310.27	31753.89	314922.07	104920.49	330417.78	23
38	30292.44	95301.46	31785.91	314604.78	104930.19	330115.39	22
39	30320.16	95292.64	31817.94	314288.07	104939.89	329813.57	21
40	30347.88	95283.82	31849.98	313971.94	104949.61	329512.34	20
41	30375.59	95274.99	31882.02	313656.39	104959.34	329211.68	19
42	30403.31	95266.15	31914.07	313341.41	104969.08	328911.60	18
43	30431.02	95257.30	31946.13	313027.01	104978.83	328612.09	17
44	30458.72	95248.44	31978.19	312713.17	104988.59	328313.16	16
45	30486.43	95239.58	32010.25	312399.91	104998.36	328014.79	15
46	30514.13	95230.71	32042.32	312087.22	105008.15	327717.00	14
47	30541.83	95221.83	32074.40	311775.09	105017.94	327419.77	13
48	30569.53	95212.94	32106.49	311463.53	105027.74	327123.11	12
49	30597.23	95204.04	32138.58	311152.54	105037.56	326827.02	11
50	30624.92	95195.14	32170.67	310842.10	105047.38	326531.49	10
51	30652.61	95186.23	32202.77	310532.23	105057.22	326236.52	9
52	30680.29	95177.31	32234.88	310222.91	105067.06	325942.11	8
53	30707.98	95168.38	32267.00	309914.16	105076.92	325648.25	7
54	30735.66	95159.44	32299.12	309605.96	105086.79	325354.96	6
55	30763.34	95150.49	32331.25	309298.31	105096.67	325062.22	5
56	30791.02	95141.54	32363.38	308991.22	105106.56	324770.03	4
57	30818.69	95132.58	32395.52	308684.68	105116.46	324478.40	3
58	30846.36	95123.61	32427.66	308378.69	105126.37	324187.32	2
59	30874.03	95114.63	32459.81	308073.25	105136.29	323896.78	1
60	30901.70	95105.65	32491.97	307768.35	105146.22	323606.80	0

C A N O N S I N V V M

18	Sinus		Tangens		Secans		
0	30901.70	95105.65	32491.97	307768.35	105146.22	323606.80	60
1	30929.36	95096.66	32524.13	307464.00	105156.17	323317.36	59
2	30957.02	95087.66	32556.30	307160.20	105166.12	323028.46	58
3	30984.68	95078.65	32588.48	306856.93	105176.08	322740.11	57
4	31012.34	95069.63	32620.66	306554.21	105186.06	322452.30	56
5	31039.99	95060.60	32652.85	306252.03	105196.05	322165.03	55
6	31067.64	95051.57	32685.04	305950.38	105206.04	321878.30	54
7	31095.29	95042.53	32717.24	305649.28	105216.05	321592.10	53
8	31122.94	95033.48	32749.44	305348.70	105226.07	321306.44	52
9	31150.58	95024.42	32781.65	305048.66	105236.10	321021.32	51
10	31178.22	95015.36	32813.87	304749.15	105246.14	320736.73	50
11	31205.86	95006.29	32846.10	304450.18	105256.19	320452.66	49
12	31233.49	94997.21	32878.33	304151.73	105266.25	320169.13	48
13	31261.12	94988.12	32910.56	303853.81	105276.33	319886.13	47
14	31288.75	94979.02	32942.80	303556.41	105286.41	319603.65	46
15	31316.38	94969.91	32975.05	303259.54	105296.51	319321.70	45
16	31344.00	94960.80	33007.31	302963.20	105306.61	319040.28	44
17	31371.63	94951.68	33039.57	302667.37	105316.73	318759.37	43
18	31399.25	94942.55	33071.84	302372.07	105326.86	318478.99	42
19	31426.86	94933.41	33104.11	302077.28	105336.99	318199.13	41
20	31454.48	94924.26	33136.39	301783.01	105347.14	317919.78	40
21	31482.09	94915.11	33168.68	301489.26	105357.30	317640.95	39
22	31509.69	94905.95	33200.97	301196.02	105367.47	317362.64	38
23	31537.30	94896.78	33233.27	300903.30	105377.65	317084.84	37
24	31564.90	94887.60	33265.57	300611.09	105387.85	316807.56	36
25	31592.50	94878.41	33297.88	300319.39	105398.05	316530.78	35
26	31620.10	94869.22	33330.20	300028.20	105408.26	316254.52	34
27	31647.70	94860.02	33362.52	299737.51	105418.49	315978.76	33
28	31675.29	94850.81	33394.85	299447.34	105428.73	315703.51	32
29	31702.88	94841.59	33427.19	299157.66	105438.97	315428.77	31
30	31730.47	94832.36	33459.53	298868.50	105449.23	315154.53	30

TANGENTIVM & SECANTIVM.

18	Sinus		Tangens		Secans		
30	31730.47	94832.36	33459.53	298868.50	105449.23	315154.53	30
31	31758.05	94823.13	33491.88	298579.83	105459.50	314880.79	29
32	31785.63	94813.89	33524.24	298291.66	105469.78	314607.56	28
33	31813.21	94804.64	33556.60	298004.00	105480.07	314334.83	27
34	31840.79	94795.38	33588.97	297716.83	105490.37	314062.59	26
35	31868.36	94786.11	33621.34	297430.16	105500.68	313790.86	25
36	31895.93	94776.84	33653.72	297143.99	105511.01	313519.62	24
37	31923.50	94767.56	33686.11	296858.31	105521.34	313248.87	23
38	31951.06	94758.27	33718.50	296573.12	105531.69	312978.62	22
39	31978.63	94748.97	33750.90	296288.42	105542.04	312708.86	21
40	32006.19	94739.66	33783.30	296004.22	105552.41	312439.59	20
41	32033.74	94730.35	33815.71	295720.50	105562.79	312170.81	19
42	32061.30	94721.03	33848.13	295437.27	105573.18	311902.52	18
43	32088.85	94711.70	33880.56	295154.53	105583.58	311634.72	17
44	32116.40	94702.36	33912.99	294872.27	105593.99	311367.40	16
45	32143.95	94693.01	33945.43	294590.50	105604.41	311100.57	15
46	32171.49	94683.66	33977.87	294309.21	105614.85	310834.22	14
47	32199.03	94674.30	34010.32	294028.40	105625.29	310568.35	13
48	32226.57	94664.93	34042.78	293748.07	105635.75	310302.96	12
49	32254.10	94655.55	34075.24	293468.22	105646.21	310038.05	11
50	32281.64	94646.16	34107.71	293188.85	105656.69	309773.63	10
51	32309.17	94636.76	34140.19	292909.95	105667.18	309509.67	9
52	32336.70	94627.36	34172.67	292631.52	105677.68	309246.20	8
53	32364.22	94617.95	34205.16	292353.58	105688.19	308983.19	7
54	32391.74	94608.53	34237.65	292076.10	105698.71	308720.66	6
55	32419.26	94599.10	34270.15	291799.09	105709.24	308458.60	5
56	32446.78	94589.67	34302.66	291522.56	105719.78	308197.02	4
57	32474.29	94580.23	34335.18	291246.49	105730.34	307935.90	3
58	32501.80	94570.78	34367.70	290970.89	105740.90	307675.25	2
59	32529.31	94561.32	34400.23	290695.76	105751.48	307415.07	1
60	32556.82	94551.85	34432.76	290421.09	105762.07	307155.35	0

C A N O N S I N V V M

19	Sinus		Tangens		Secans		
0	32556.82	94551.85	34432.76	290421.09	105762.07	307155.35	60
1	32584.32	94542.38	34465.30	290146.88	105772.67	306896.10	59
2	32611.82	94532.90	34497.85	289873.14	105783.28	306637.31	58
3	32639.31	94523.41	34530.40	289599.86	105793.90	306378.98	57
4	32666.81	94513.91	34562.96	289327.04	105804.53	306121.11	56
5	32694.30	94504.40	34595.53	289054.67	105815.17	305863.70	55
6	32721.79	94494.89	34628.10	288782.77	105825.83	305606.75	54
7	32749.28	94485.37	34660.68	288511.32	105836.49	305350.26	53
8	32776.76	94475.84	34693.27	288240.33	105847.17	305094.23	52
9	32804.24	94466.30	34725.86	287969.79	105857.86	304838.64	51
10	32831.72	94456.75	34758.46	287699.70	105868.55	304583.52	50
11	32859.19	94447.20	34791.07	287430.07	105879.26	304328.84	49
12	32886.66	94437.64	34823.68	287160.88	105889.99	304074.62	48
13	32914.13	94428.07	34856.30	286892.15	105900.72	303820.84	47
14	32941.60	94418.49	34888.93	286623.86	105911.46	303567.52	46
15	32969.06	94408.90	34921.56	286356.02	105922.21	303314.64	45
16	32996.52	94399.31	34954.20	286088.63	105932.98	303062.21	44
17	33023.98	94389.71	34986.85	285821.68	105943.76	302810.23	43
18	33051.44	94380.10	35019.50	285555.17	105954.54	302558.68	42
19	33078.89	94370.48	35052.16	285289.11	105965.34	302307.59	41
20	33106.34	94360.85	35084.83	285023.49	105976.15	302056.93	40
21	33133.79	94351.21	35117.50	284758.31	105986.97	301806.72	39
22	33161.23	94341.57	35150.18	284493.56	105997.81	301556.94	38
23	33188.67	94331.92	35182.87	284229.26	106008.65	301307.60	37
24	33216.11	94322.26	35215.56	283965.39	106019.51	301058.70	36
25	33243.55	94312.60	35248.26	283701.96	106030.37	300810.24	35
26	33270.98	94302.93	35280.97	283438.96	106041.25	300562.21	34
27	33298.41	94293.25	35313.68	283176.39	106052.14	300314.62	33
28	33325.84	94283.56	35346.40	282914.26	106063.04	300067.46	32
29	33353.27	94273.86	35379.13	282652.56	106073.95	299820.73	31
30	33380.69	94264.15	35411.86	282391.29	106084.87	299574.43	30

TANGENTIVM & SECANTIVM.

19	Sinus		Tangens		Secans		
30	33380.69	94264.15	35411.86	282391.29	106084.87	299574.43	30
31	33408.10	94254.43	35444.60	282130.45	106095.80	299328.56	29
32	33435.52	94244.71	35477.35	281870.03	106106.75	299083.12	28
33	33462.93	94234.98	35510.10	281610.04	106117.70	298838.11	27
34	33490.34	94225.24	35542.86	281350.48	106128.67	298593.52	26
35	33517.75	94215.50	35575.63	281091.34	106139.65	298349.36	25
36	33545.16	94205.75	35608.40	280832.63	106150.64	298105.63	24
37	33572.56	94195.99	35641.18	280574.33	106161.64	297862.31	23
38	33599.96	94186.22	35673.97	280316.46	106172.65	297619.42	22
39	33627.35	94176.44	35706.76	280059.01	106183.67	297376.95	21
40	33654.75	94166.65	35739.56	279801.98	106194.71	297134.90	20
41	33682.14	94156.85	35772.37	279545.37	106205.75	296893.27	19
42	33709.53	94147.05	35805.18	279289.17	106216.81	296652.05	18
43	33736.91	94137.24	35838.00	279033.39	106227.88	296411.25	17
44	33764.29	94127.42	35870.83	278778.02	106238.96	296170.87	16
45	33791.67	94117.60	35903.67	278523.07	106250.05	295930.90	15
46	33819.05	94107.77	35936.51	278268.53	106261.15	295691.35	14
47	33846.42	94097.93	35969.36	278014.40	106272.27	295452.21	13
48	33873.79	94088.08	36002.22	277760.69	106283.39	295213.48	12
49	33901.16	94078.22	36035.08	277507.38	106294.53	294975.16	11
50	33928.53	94068.35	36067.95	277254.48	106305.68	294737.25	10
51	33955.89	94058.48	36100.83	277001.99	106316.84	294499.75	9
52	33983.25	94048.60	36133.71	276749.90	106328.01	294262.65	8
53	34010.60	94038.71	36166.60	276498.22	106339.19	294025.97	7
54	34037.95	94028.81	36199.50	276246.95	106350.38	293789.68	6
55	34065.30	94018.90	36232.40	275996.08	106361.58	293553.80	5
56	34092.65	94008.99	36265.31	275745.61	106372.80	293318.33	4
57	34120.00	93999.07	36298.23	275495.54	106384.03	293083.26	3
58	34147.34	93989.14	36331.15	275245.88	106395.27	292848.58	2
59	34174.68	93979.20	36364.08	274996.61	106406.52	292614.31	1
60	34202.02	93969.26	36397.02	274747.74	106417.78	292380.44	0

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C A N O N S I N V V M

20	Sinus		Tangens		Secans		
0	34202.02	93969.26	36397.02	274747.74	106417.78	292380.44	60
1	34229.35	93959.31	36429.97	274499.27	106429.05	292146.97	59
2	34256.68	93949.35	36462.92	274251.20	106440.33	291913.89	58
3	34284.01	93939.38	36495.88	274003.52	106451.63	291681.21	57
4	34311.33	93929.40	36528.85	273756.23	106462.94	291448.92	56
5	34338.65	93919.42	36561.82	273509.34	106474.26	291217.03	55
6	34365.97	93909.43	36594.80	273262.84	106485.59	290985.53	54
7	34393.29	93899.43	36627.79	273016.74	106496.93	290754.43	53
8	34420.60	93889.42	36660.79	272771.02	106508.28	290523.72	52
9	34447.91	93879.40	36693.79	272525.69	106519.64	290293.39	51
10	34475.22	93869.37	36726.80	272280.75	106531.01	290063.46	50
11	34502.52	93859.34	36759.82	272036.20	106542.40	289833.91	49
12	34529.82	93849.30	36792.84	271792.04	106553.80	289604.75	48
13	34557.12	93839.25	36825.87	271548.26	106565.21	289375.98	47
14	34584.42	93829.19	36858.91	271304.87	106576.63	289147.60	46
15	34611.71	93819.13	36891.95	271061.86	106588.07	288919.59	45
16	34639.00	93809.06	36925.00	270819.23	106599.51	288691.98	44
17	34666.29	93798.98	36958.06	270576.99	106610.97	288464.74	43
18	34693.57	93788.89	36991.13	270335.13	106622.43	288237.89	42
19	34720.85	93778.79	37024.20	270093.64	106633.91	288011.42	41
20	34748.13	93768.69	37057.28	269852.54	106645.40	287785.32	40
21	34775.40	93758.58	37090.37	269611.81	106656.90	287559.61	39
22	34802.67	93748.46	37123.46	269371.47	106668.42	287334.28	38
23	34829.94	93738.33	37156.56	269131.49	106679.94	287109.32	37
24	34857.21	93728.19	37189.67	268891.90	106691.48	286884.74	36
25	34884.47	93718.05	37222.78	268652.67	106703.02	286660.53	35
26	34911.73	93707.90	37255.90	268413.83	106714.58	286436.70	34
27	34938.99	93697.74	37289.03	268175.35	106726.15	286213.24	33
28	34966.24	93687.57	37322.17	267937.25	106737.74	285990.15	32
29	34993.49	93677.40	37355.32	267699.51	106749.34	285767.44	31
30	35020.74	93667.22	37388.47	267462.15	106760.94	285545.09	30

TANGENTIVM & SECANTIVM.

20	Sinus		Tangens		Secans		
30	35020.74	93667.22	37388.47	267462.15	106760.94	285545.09	30
31	35047.99	93657.03	37421.63	267225.16	106772.55	285323.12	29
32	35075.23	93646.83	37454.79	266988.53	106784.18	285101.52	28
33	35102.47	93636.62	37487.97	266752.27	106795.82	284880.28	27
34	35129.70	93626.40	37521.15	266516.38	106807.47	284659.41	26
35	35156.93	93616.18	37554.34	266280.85	106819.14	284438.91	25
36	35184.16	93605.95	37587.53	266045.69	106830.81	284218.77	24
37	35211.39	93595.71	37620.73	265810.89	106842.50	283998.99	23
38	35238.62	93585.46	37653.94	265576.45	106854.20	283779.58	22
39	35265.84	93575.21	37687.16	265342.38	106865.91	283560.54	21
40	35293.06	93564.95	37720.38	265108.67	106877.63	283341.85	20
41	35320.27	93554.68	37753.61	264875.31	106889.36	283123.53	19
42	35347.48	93544.40	37786.85	264642.32	106901.10	282905.56	18
43	35374.69	93534.11	37820.10	264409.69	106912.86	282687.96	17
44	35401.90	93523.82	37853.35	264177.41	106924.63	282470.71	16
45	35429.10	93513.52	37886.61	263945.49	106936.41	282253.82	15
46	35456.30	93503.21	37919.88	263713.92	106948.20	282037.29	14
47	35483.50	93492.89	37953.16	263482.71	106960.00	281821.11	13
48	35510.70	93482.56	37986.44	263251.86	106971.82	281605.29	12
49	35537.89	93472.23	38019.73	263021.36	106983.64	281389.82	11
50	35565.08	93461.89	38053.03	262791.21	106995.48	281174.71	10
51	35592.26	93451.54	38086.33	262561.41	107007.33	280959.95	9
52	35619.44	93441.18	38119.64	262331.96	107019.19	280745.54	8
53	35646.62	93430.82	38152.96	262102.86	107031.06	280531.48	7
54	35673.80	93420.45	38186.29	261874.11	107042.95	280317.77	6
55	35700.97	93410.07	38219.62	261645.71	107054.84	280104.41	5
56	35728.14	93399.68	38252.96	261417.66	107066.75	279891.40	4
57	35755.31	93389.28	38286.31	261189.95	107078.67	279678.73	3
58	35782.48	93378.87	38319.67	260962.59	107090.60	279466.41	2
59	35809.64	93368.46	38353.03	260735.58	107102.54	279254.44	1
60	35836.79	93358.04	38386.40	260508.91	107114.50	279042.81	0

C A N O N S I N V V M

21	Sinus		Tangens		Secans		
0	35836.79	93358.04	38386.40	260508.91	107114.50	279042.81	60
1	35863.95	93347.61	38419.78	260282.58	107126.47	278831.53	59
2	35891.10	93337.17	38453.17	260056.59	107138.44	278620.59	58
3	35918.25	93326.73	38486.56	259830.95	107150.43	278409.99	57
4	35945.40	93316.28	38519.96	259605.64	107162.44	278199.73	56
5	35972.54	93305.82	38553.37	259380.68	107174.45	277989.82	55
6	35999.68	93295.35	38586.79	259156.06	107186.47	277780.24	54
7	36026.82	93284.87	38620.21	258931.77	107198.51	277571.00	53
8	36053.95	93274.39	38653.64	258707.82	107210.56	277362.11	52
9	36081.08	93263.90	38687.08	258484.21	107222.62	277153.55	51
10	36108.21	93253.40	38720.53	258260.94	107234.69	276945.32	50
11	36135.33	93242.89	38753.98	258038.00	107246.78	276737.43	49
12	36162.46	93232.38	38787.44	257815.39	107258.87	276529.88	48
13	36189.58	93221.86	38820.91	257593.12	107270.98	276322.66	47
14	36216.69	93211.33	38854.39	257371.18	107283.10	276115.78	46
15	36243.80	93200.79	38887.87	257149.57	107295.23	275909.23	45
16	36270.91	93190.24	38921.36	256928.30	107307.37	275703.01	44
17	36298.02	93179.68	38954.86	256707.35	107319.53	275497.12	43
18	36325.12	93169.12	38988.37	256486.74	107331.70	275291.57	42
19	36352.22	93158.55	39021.89	256266.45	107343.88	275086.34	41
20	36379.32	93147.97	39055.41	256046.49	107356.07	274881.44	40
21	36406.41	93137.38	39088.94	255826.86	107368.27	274676.87	39
22	36433.50	93126.79	39122.48	255607.56	107380.48	274472.63	38
23	36460.59	93116.19	39156.02	255388.58	107392.71	274268.71	37
24	36487.68	93105.58	39189.57	255169.92	107404.95	274065.12	36
25	36514.76	93094.96	39223.13	254951.60	107417.20	273861.86	35
26	36541.84	93084.33	39256.70	254733.59	107429.46	273658.92	34
27	36568.92	93073.70	39290.28	254515.91	107441.73	273456.30	33
28	36595.99	93063.06	39323.86	254298.55	107454.02	273254.00	32
29	36623.06	93052.41	39357.45	254081.51	107466.31	273052.03	31
30	36650.13	93041.75	39391.05	253864.79	107478.62	272850.38	30

TANGENTIVM & SECANTIVM.

21	Sinus		Tangens		Secans		
30	36650.13	93041.75	39391.05	253864.79	107478.62	272850.38	30
31	36677.19	93031.09	39424.66	253648.39	107490.95	272649.05	29
32	36704.25	93020.42	39458.27	253432.31	107503.28	272448.04	28
33	36731.31	93009.74	39491.89	253216.55	107515.62	272247.35	27
34	36758.36	92999.05	39525.52	253001.11	107527.98	272046.98	26
35	36785.41	92988.35	39559.16	252785.98	107540.35	271846.93	25
36	36812.46	92977.65	39592.80	252571.17	107552.73	271647.19	24
37	36839.50	92966.94	39626.45	252356.67	107565.12	271447.77	23
38	36866.54	92956.22	39660.11	252142.49	107577.53	271248.66	22
39	36893.58	92945.49	39693.78	251928.63	107589.95	271049.87	21
40	36920.62	92934.75	39727.46	251715.07	107602.37	270851.39	20
41	36947.65	92924.01	39761.14	251501.83	107614.81	270653.23	19
42	36974.68	92913.26	39794.83	251288.90	107627.27	270455.38	18
43	37001.70	92902.50	39828.53	251076.29	107639.73	270257.84	17
44	37028.72	92891.73	39862.24	250863.98	107652.21	270060.61	16
45	37055.74	92880.95	39895.96	250651.98	107664.70	269863.70	15
46	37082.76	92870.17	39929.68	250440.29	107677.20	269667.09	14
47	37109.77	92859.38	39963.41	250228.91	107689.71	269470.79	13
48	37136.78	92848.58	39997.15	250017.84	107702.24	269274.80	12
49	37163.79	92837.77	40030.89	249807.07	107714.77	269079.12	11
50	37190.80	92826.96	40064.65	249596.61	107727.32	268883.74	10
51	37217.80	92816.14	40098.41	249386.45	107739.88	268688.67	9
52	37244.80	92805.31	40132.18	249176.60	107752.46	268493.91	8
53	37271.79	92794.47	40165.96	248967.06	107765.04	268299.45	7
54	37298.78	92783.62	40199.75	248757.81	107777.64	268105.30	6
55	37325.77	92772.77	40233.54	248548.87	107790.25	267911.45	5
56	37352.75	92761.91	40267.34	248340.23	107802.87	267717.90	4
57	37379.73	92751.04	40301.15	248131.90	107815.50	267524.65	3
58	37406.71	92740.16	40334.97	247923.86	107828.15	267331.70	2
59	37433.69	92729.28	40368.79	247716.12	107840.80	267139.06	1
60	37460.66	92718.39	40402.62	247508.69	107853.47	266946.72	0

C A N O N S I N V V M

22	Sinus		Tangens		Secans		
0	37460.66	92718.39	40402.62	247508.69	107853.47	266946.72	60
1	37487.63	92707.49	40436.46	247301.55	107866.16	266754.67	59
2	37514.59	92696.58	40470.31	247094.70	107878.85	266562.92	58
3	37541.56	92685.66	40504.17	246888.16	107891.56	266371.48	57
4	37568.52	92674.73	40538.04	246681.91	107904.27	266180.33	56
5	37595.47	92663.80	40571.91	246475.96	107917.00	265989.47	55
6	37622.43	92652.86	40605.79	246270.30	107929.75	265798.91	54
7	37649.38	92641.91	40639.68	246064.94	107942.50	265608.65	53
8	37676.32	92630.96	40673.58	245859.87	107955.27	265418.68	52
9	37703.27	92620.00	40707.48	245655.09	107968.05	265229.01	51
10	37730.21	92609.03	40741.39	245450.61	107980.84	265039.62	50
11	37757.14	92598.05	40775.31	245246.42	107993.64	264850.54	49
12	37784.08	92587.06	40809.24	245042.52	108006.46	264661.74	48
13	37811.01	92576.06	40843.18	244838.91	108019.28	264473.23	47
14	37837.94	92565.06	40877.13	244635.59	108032.12	264285.02	46
15	37864.86	92554.05	40911.08	244432.56	108044.97	264097.09	45
16	37891.78	92543.03	40945.04	244229.82	108057.84	263909.46	44
17	37918.70	92532.00	40979.01	244027.36	108070.71	263722.11	43
18	37945.62	92520.97	41012.99	243825.19	108083.60	263535.05	42
19	37972.53	92509.93	41046.97	243623.31	108096.50	263348.28	41
20	37999.44	92498.88	41080.97	243421.72	108109.42	263161.80	40
21	38026.34	92487.82	41114.97	243220.41	108122.34	262975.60	39
22	38053.24	92476.75	41148.98	243019.38	108135.28	262789.69	38
23	38080.14	92465.68	41183.00	242818.64	108148.23	262604.06	37
24	38107.04	92454.60	41217.03	242618.19	108161.19	262418.72	36
25	38133.93	92443.51	41251.06	242418.01	108174.17	262233.66	35
26	38160.82	92432.41	41285.10	242218.12	108187.15	262048.88	34
27	38187.70	92421.31	41319.15	242018.51	108200.15	261864.39	33
28	38214.59	92410.20	41353.21	241819.18	108213.16	261680.18	32
29	38241.47	92399.08	41387.28	241620.13	108226.18	261496.24	31
30	38268.34	92387.95	41421.36	241421.36	108239.22	261312.59	30

TANGENTIVM & SECANTIVM.

22	Sinus		Tangens		Secans		
30	38268.34	92387.95	41421.36	241421.36	108239.22	261312.59	30
31	38295.22	92376.81	41455.44	241222.86	108252.27	261129.22	29
32	38322.09	92365.67	41489.53	241024.65	108265.33	260946.13	28
33	38348.95	92354.52	41523.63	240826.72	108278.40	260763.32	27
34	38375.82	92343.36	41557.74	240629.06	108291.49	260580.78	26
35	38402.68	92332.19	41591.86	240431.68	108304.58	260398.52	25
36	38429.53	92321.02	41625.99	240234.57	108317.69	260216.54	24
37	38456.39	92309.84	41660.12	240037.74	108330.81	260034.84	23
38	38483.24	92298.65	41694.26	239841.18	108343.95	259853.41	22
39	38510.08	92287.45	41728.41	239644.90	108357.09	259672.25	21
40	38536.93	92276.24	41762.57	239448.89	108370.25	259491.37	20
41	38563.77	92265.03	41796.74	239253.16	108383.42	259310.77	19
42	38590.60	92253.81	41830.91	239057.69	108396.61	259130.43	18
43	38617.44	92242.58	41865.09	238862.50	108409.80	258950.37	17
44	38644.27	92231.34	41899.28	238667.58	108423.01	258770.58	16
45	38671.10	92220.09	41933.48	238472.93	108436.23	258591.07	15
46	38697.92	92208.84	41967.69	238278.55	108449.47	258411.82	14
47	38724.74	92197.58	42001.91	238084.44	108462.71	258232.84	13
48	38751.56	92186.31	42036.13	237890.60	108475.97	258054.14	12
49	38778.37	92175.03	42070.36	237697.03	108489.24	257875.70	11
50	38805.18	92163.75	42104.60	237503.72	108502.52	257697.53	10
51	38831.99	92152.46	42138.85	237310.68	108515.82	257519.63	9
52	38858.80	92141.16	42173.11	237117.91	108529.13	257341.99	8
53	38885.60	92129.85	42207.38	236925.40	108542.45	257164.62	7
54	38912.39	92118.54	42241.66	236733.16	108555.78	256987.52	6
55	38939.19	92107.22	42275.94	236541.18	108569.12	256810.69	5
56	38965.98	92095.89	42310.23	236349.46	108582.48	256634.12	4
57	38992.77	92084.55	42344.53	236158.01	108595.85	256457.81	3
58	39019.55	92073.20	42378.84	235966.83	108609.24	256281.76	2
59	39046.33	92061.85	42413.16	235775.90	108622.63	256105.99	1
60	39073.11	92050.49	42447.49	235585.24	108636.04	255930.47	0

C A N O N S I N V V M

23	Sinus		Tangens		Secans		
0	39073.11	92050.49	42447.49	235585.24	108636.04	255930.47	60
1	39099.89	92039.12	42481.82	235394.83	108649.46	255755.21	59
2	39126.66	92027.74	42516.16	235204.69	108662.89	255580.22	58
3	39153.43	92016.35	42550.51	235014.81	108676.34	255405.48	57
4	39180.19	92004.96	42584.87	234825.19	108689.79	255231.01	56
5	39206.95	91993.56	42619.24	234635.82	108703.26	255056.80	55
6	39233.71	91982.15	42653.62	234446.72	108716.75	254882.84	54
7	39260.47	91970.73	42688.00	234257.87	108730.24	254709.15	53
8	39287.22	91959.31	42722.39	234069.28	108743.75	254535.71	52
9	39313.97	91947.88	42756.79	233880.95	108757.27	254362.53	51
10	39340.71	91936.44	42791.20	233692.87	108770.80	254189.61	50
11	39367.45	91924.99	42825.62	233505.05	108784.35	254016.94	49
12	39394.19	91913.53	42860.05	233317.48	108797.91	253844.53	48
13	39420.93	91902.07	42894.49	233130.17	108811.48	253672.38	47
14	39447.66	91890.60	42928.94	232943.11	108825.06	253500.48	46
15	39474.39	91879.12	42963.39	232756.30	108838.66	253328.83	45
16	39501.11	91867.63	42997.85	232569.75	108852.27	253157.44	44
17	39527.83	91856.14	43032.32	232383.45	108865.89	252986.30	43
18	39554.55	91844.64	43066.80	232197.40	108879.52	252815.41	42
19	39581.27	91833.13	43101.29	232011.60	108893.17	252644.78	41
20	39607.98	91821.61	43135.79	231826.06	108906.83	252474.40	40
21	39634.69	91810.08	43170.30	231640.76	108920.50	252304.26	39
22	39661.39	91798.55	43204.81	231455.71	108934.18	252134.38	38
23	39688.09	91787.01	43239.33	231270.91	108947.88	251964.75	37
24	39714.79	91775.46	43273.86	231086.36	108961.59	251795.37	36
25	39741.48	91763.90	43308.40	230902.06	108975.31	251626.24	35
26	39768.17	91752.34	43342.95	230718.01	108989.04	251457.35	34
27	39794.86	91740.77	43377.51	230534.20	109002.79	251288.71	33
28	39821.55	91729.19	43412.08	230350.64	109016.55	251120.32	32
29	39848.23	91717.60	43446.66	230167.32	109030.32	250952.18	31
30	39874.91	91706.01	43481.24	229984.25	109044.11	250784.28	30

TANGENTIVM & SECANTIVM.

23	Sinus		Tangens		Secans		
30	39874.91	91706.01	43481.24	229984.25	109044.11	250784.28	30
31	39901.58	91694.41	43515.83	229801.43	109057.91	250616.63	29
32	39928.25	91682.80	43550.43	229618.85	109071.72	250449.23	28
33	39954.92	91671.18	43585.04	229436.51	109085.54	250282.07	27
34	39981.58	91659.55	43619.66	229254.42	109099.38	250115.15	26
35	40008.24	91647.91	43654.29	229072.57	109113.23	249948.47	25
36	40034.90	91636.27	43688.93	228890.96	109127.09	249782.04	24
37	40061.56	91624.62	43723.58	228709.59	109140.97	249615.86	23
38	40088.21	91612.96	43758.23	228528.46	109154.86	249449.91	22
39	40114.86	91601.30	43792.89	228347.58	109168.76	249284.21	21
40	40141.50	91589.63	43827.56	228166.93	109182.67	249118.74	20
41	40168.14	91577.95	43862.24	227986.53	109196.59	248953.52	19
42	40194.78	91566.26	43896.93	227806.36	109210.53	248788.54	18
43	40221.41	91554.56	43931.63	227626.43	109224.48	248623.80	17
44	40248.04	91542.86	43966.34	227446.74	109238.45	248459.29	16
45	40274.67	91531.15	44001.06	227267.29	109252.43	248295.03	15
46	40301.29	91519.43	44035.78	227088.07	109266.42	248131.00	14
47	40327.91	91507.70	44070.51	226909.09	109280.42	247967.21	13
48	40354.53	91495.96	44105.25	226730.35	109294.44	247803.66	12
49	40381.14	91484.22	44140.00	226551.84	109308.47	247640.34	11
50	40407.75	91472.47	44174.76	226373.57	109322.51	247477.26	10
51	40434.36	91460.71	44209.53	226195.53	109336.56	247314.42	9
52	40460.96	91448.95	44244.31	226017.73	109350.63	247151.81	8
53	40487.56	91437.18	44279.10	225840.16	109364.71	246989.43	7
54	40514.16	91425.40	44313.90	225662.83	109378.80	246827.29	6
55	40540.75	91413.61	44348.71	225485.72	109392.91	246665.38	5
56	40567.34	91401.81	44383.53	225308.85	109407.03	246503.71	4
57	40593.93	91390.00	44418.35	225132.21	109421.16	246342.27	3
58	40620.51	91378.19	44453.18	224955.80	109435.30	246181.06	2
59	40647.09	91366.37	44488.02	224779.62	109449.46	246020.08	1
60	40673.66	91354.54	44522.87	224603.68	109463.63	245859.33	0

CANON SIN VVM

24	Sinus		Tangens		Secans		
0	40673.66	91354.54	44522.87	224603.68	109463.63	245859.33	60
1	40700.23	91342.71	44557.73	224427.96	109477.81	245698.82	59
2	40726.80	91330.87	44592.60	224252.47	109492.01	245538.53	58
3	40753.37	91319.02	44627.48	224077.21	109506.22	245378.48	57
4	40779.93	91307.16	44662.37	223902.18	109520.44	245218.65	56
5	40806.49	91295.29	44697.27	223727.38	109534.67	245059.05	55
6	40833.05	91283.42	44732.17	223552.80	109548.92	244899.68	54
7	40859.60	91271.54	44767.08	223378.45	109563.18	244740.54	53
8	40886.15	91259.65	44802.00	223204.33	109577.46	244581.63	52
9	40912.69	91247.75	44836.93	223030.43	109591.74	244422.94	51
10	40939.23	91235.84	44871.87	222856.76	109606.04	244264.48	50
11	40965.77	91223.93	44906.82	222683.31	109620.36	244106.24	49
12	40992.30	91212.01	44941.78	222510.09	109634.68	243948.23	48
13	41018.83	91200.08	44976.75	222337.09	109649.02	243790.45	47
14	41045.36	91188.14	45011.73	222164.32	109663.37	243632.89	46
15	41071.89	91176.20	45046.72	221991.77	109677.74	243475.55	45
16	41098.41	91164.25	45081.72	221819.44	109692.12	243318.44	44
17	41124.93	91152.29	45116.73	221647.33	109706.51	243161.55	43
18	41151.44	91140.32	45151.74	221475.45	109720.91	243004.89	42
19	41177.95	91128.35	45186.76	221303.79	109735.33	242848.44	41
20	41204.46	91116.37	45221.79	221132.34	109749.76	242692.22	40
21	41230.96	91104.38	45256.83	220961.12	109764.20	242536.22	39
22	41257.46	91092.38	45291.88	220790.12	109778.66	242380.44	38
23	41283.95	91080.38	45326.94	220619.34	109793.13	242224.88	37
24	41310.44	91068.37	45362.01	220448.78	109807.61	242069.54	36
25	41336.93	91056.35	45397.09	220278.43	109822.11	241914.42	35
26	41363.42	91044.32	45432.18	220108.31	109836.62	241759.52	34
27	41389.90	91032.28	45467.28	219938.40	109851.14	241604.84	33
28	41416.38	91020.24	45502.39	219768.71	109865.68	241450.38	32
29	41442.85	91008.19	45537.51	219599.23	109880.23	241296.13	31
30	41469.32	90996.13	45572.64	219429.97	109894.79	241142.10	30

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TANGENTIVM & SECANTIVM.

24	Sinus		Tangens		Secans		
30	41469.32	90996.13	45572.64	219429.97	109894.79	241142.10	30
31	41495.79	90984.06	45607.77	219260.93	109909.36	240988.29	29
32	41522.26	90971.98	45642.91	219092.10	109923.95	240834.69	28
33	41548.72	90959.90	45678.06	218923.49	109938.55	240681.32	27
34	41575.18	90947.81	45713.22	218755.10	109953.17	240528.15	26
35	41601.63	90935.71	45748.39	218586.91	109967.79	240375.20	25
36	41628.08	90923.61	45783.57	218418.94	109982.43	240222.47	24
37	41654.53	90911.50	45818.76	218251.19	109997.09	240069.95	23
38	41680.97	90899.38	45853.96	218083.64	110011.76	239917.64	22
39	41707.41	90887.25	45889.17	217916.31	110026.44	239765.55	21
40	41733.85	90875.11	45924.39	217749.20	110041.13	239613.67	20
41	41760.28	90862.97	45959.62	217582.29	110055.84	239462.01	19
42	41786.71	90850.82	45994.86	217415.59	110070.56	239310.55	18
43	41813.13	90838.66	46030.11	217249.11	110085.29	239159.31	17
44	41839.55	90826.49	46065.37	217082.83	110100.04	239008.28	16
45	41865.97	90814.32	46100.64	216916.77	110114.80	238857.46	15
46	41892.39	90802.14	46135.91	216750.91	110129.57	238706.85	14
47	41918.80	90789.95	46171.19	216585.27	110144.36	238556.45	13
48	41945.21	90777.75	46206.48	216419.83	110159.16	238406.25	12
49	41971.61	90765.54	46241.78	216254.60	110173.97	238256.27	11
50	41998.01	90753.33	46277.09	216089.58	110188.79	238106.50	10
51	42024.41	90741.11	46312.42	215924.76	110203.63	237956.93	9
52	42050.80	90728.88	46347.76	215760.15	110218.49	237807.58	8
53	42077.19	90716.64	46383.11	215595.75	110233.35	237658.43	7
54	42103.58	90704.40	46418.46	215431.56	110248.23	237509.49	6
55	42129.96	90692.15	46453.82	215267.57	110263.13	237360.75	5
56	42156.34	90679.89	46489.19	215103.78	110278.03	237212.22	4
57	42182.72	90667.62	46524.57	214940.20	110292.95	237063.90	3
58	42209.09	90655.35	46559.96	214776.83	110307.89	236915.78	2
59	42235.46	90643.07	46595.36	214613.66	110322.83	236767.87	1
60	42261.83	90630.78	46630.77	214450.69	110337.79	236620.16	0

25	Sinus		Tangens		Secans		
0	42261.83	90630.78	46630.77	214450.69	110337.79	236620.16	60
1	42288.19	90618.48	46666.19	214287.93	110352.77	236472.65	59
2	42314.55	90606.17	46701.62	214125.37	110367.75	236325.35	58
3	42340.90	90593.86	46737.06	213963.01	110382.75	236178.26	57
4	42367.25	90581.54	46772.51	213800.85	110397.77	236031.36	56
5	42393.60	90569.21	46807.97	213638.89	110412.79	235884.67	55
6	42419.94	90556.88	46843.43	213477.14	110427.83	235738.18	54
7	42446.28	90544.54	46878.90	213315.59	110442.89	235591.89	53
8	42472.62	90532.19	46914.38	213154.23	110457.95	235445.81	52
9	42498.95	90519.83	46949.88	212993.08	110473.03	235299.92	51
10	42525.28	90507.46	46985.39	212832.13	110488.13	235154.24	50
11	42551.61	90495.09	47020.90	212671.37	110503.24	235008.75	49
12	42577.93	90482.71	47056.43	212510.82	110518.36	234863.47	48
13	42604.25	90470.32	47091.96	212350.46	110533.49	234718.38	47
14	42630.56	90457.92	47127.51	212190.30	110548.64	234573.49	46
15	42656.87	90445.51	47163.06	212030.34	110563.80	234428.80	45
16	42683.18	90433.10	47198.63	211870.57	110578.98	234284.31	44
17	42709.49	90420.68	47234.20	211711.01	110594.17	234140.02	43
18	42735.79	90408.25	47269.78	211551.64	110609.37	233995.93	42
19	42762.09	90395.82	47305.38	211392.46	110624.58	233852.03	41
20	42788.38	90383.38	47340.98	211233.48	110639.81	233708.33	40
21	42814.67	90370.93	47376.59	211074.70	110655.06	233564.82	39
22	42840.95	90358.47	47412.22	210916.11	110670.31	233421.52	38
23	42867.23	90346.00	47447.85	210757.71	110685.58	233278.40	37
24	42893.51	90333.53	47483.49	210599.51	110700.87	233135.48	36
25	42919.79	90321.05	47519.14	210441.50	110716.16	232992.76	35
26	42946.06	90308.56	47554.81	210283.69	110731.47	232850.23	34
27	42972.33	90296.06	47590.48	210126.07	110746.80	232707.90	33
28	42998.59	90283.56	47626.16	209968.64	110762.14	232565.75	32
29	43024.85	90271.05	47661.85	209811.40	110777.49	232423.81	31
30	43051.11	90258.53	47697.55	209654.36	110792.85	232282.05	30

TANGENTIVM & SECANTIVM.

25	Sinus		Tangens		Secans		
30	43051.11	90258.53	47697.55	209654.36	110792.85	232282.05	30
31	43077.36	90246.00	47733.26	209497.51	110808.23	232140.49	29
32	43103.61	90233.47	47768.99	209340.84	110823.63	231999.11	28
33	43129.86	90220.93	47804.72	209184.37	110839.03	231857.94	27
34	43156.10	90208.38	47840.46	209028.09	110854.45	231716.95	26
35	43182.34	90195.82	47876.21	208872.00	110869.89	231576.15	25
36	43208.57	90183.25	47911.97	208716.10	110885.33	231435.54	24
37	43234.80	90170.68	47947.74	208560.39	110900.79	231295.13	23
38	43261.03	90158.10	47983.52	208404.86	110916.27	231154.90	22
39	43287.26	90145.51	48019.32	208249.53	110931.76	231014.86	21
40	43313.48	90132.91	48055.12	208094.38	110947.26	230875.01	20
41	43339.70	90120.31	48090.93	207939.42	110962.77	230735.35	19
42	43365.91	90107.70	48126.75	207784.65	110978.30	230595.88	18
43	43392.12	90095.08	48162.58	207630.07	110993.85	230456.60	17
44	43418.33	90082.45	48198.42	207475.67	111009.41	230317.51	16
45	43444.53	90069.82	48234.27	207321.46	111024.98	230178.60	15
46	43470.73	90057.18	48270.14	207167.43	111040.56	230039.88	14
47	43496.92	90044.53	48306.01	207013.59	111056.16	229901.34	13
48	43523.11	90031.87	48341.89	206859.93	111071.77	229762.99	12
49	43549.30	90019.21	48377.78	206706.46	111087.40	229624.83	11
50	43575.48	90006.54	48413.68	206553.18	111103.04	229486.85	10
51	43601.66	89993.86	48449.59	206400.08	111118.69	229349.06	9
52	43627.84	89981.17	48485.52	206247.16	111134.36	229211.45	8
53	43654.01	89968.48	48521.45	206094.42	111150.04	229074.03	7
54	43680.18	89955.78	48557.39	205941.87	111165.73	228936.79	6
55	43706.34	89943.07	48593.34	205789.50	111181.44	228799.74	5
56	43732.50	89930.35	48629.31	205637.32	111197.16	228662.86	4
57	43758.66	89917.62	48665.28	205485.31	111212.90	228526.18	3
58	43784.82	89904.89	48701.26	205333.49	111228.65	228389.67	2
59	43810.97	89892.15	48737.26	205181.84	111244.42	228253.34	1
60	43837.12	89879.40	48773.26	205030.38	111260.19	228117.20	0

C A N O N S I N V V M

26	Sinus		Tangens		Secans		
0	43837.12	89879.40	48773.26	205030.38	111260.19	228117.20	60
1	43863.26	89866.65	48809.27	204879.10	111275.98	227981.24	59
2	43889.40	89853.89	48845.30	204728.00	111291.79	227845.46	58
3	43915.53	89841.12	48881.33	204577.08	111307.61	227709.86	57
4	43941.66	89828.34	48917.37	204426.34	111323.45	227574.45	56
5	43967.79	89815.55	48953.43	204275.78	111339.30	227439.21	55
6	43993.92	89802.76	48989.49	204125.40	111355.16	227304.15	54
7	44020.04	89789.96	49025.57	203975.19	111371.03	227169.27	53
8	44046.16	89777.15	49061.66	203825.17	111386.92	227034.57	52
9	44072.27	89764.33	49097.75	203675.32	111402.82	226900.05	51
10	44098.38	89751.51	49133.86	203525.65	111418.74	226765.71	50
11	44124.48	89738.68	49169.97	203376.15	111434.67	226631.55	49
12	44150.58	89725.84	49206.10	203226.83	111450.62	226497.56	48
13	44176.68	89712.99	49242.24	203077.69	111466.58	226363.75	47
14	44202.78	89700.13	49278.38	202928.73	111482.55	226230.12	46
15	44228.87	89687.27	49314.54	202779.94	111498.54	226096.67	45
16	44254.96	89674.40	49350.71	202631.33	111514.54	225963.39	44
17	44281.04	89661.52	49386.89	202482.89	111530.56	225830.29	43
18	44307.12	89648.64	49423.08	202334.62	111546.59	225697.36	42
19	44333.20	89635.75	49459.28	202186.53	111562.63	225564.61	41
20	44359.27	89622.85	49495.49	202038.62	111578.69	225432.04	40
21	44385.34	89609.94	49531.71	201890.88	111594.76	225299.64	39
22	44411.40	89597.03	49567.94	201743.31	111610.84	225167.41	38
23	44437.46	89584.11	49604.18	201595.92	111626.94	225035.36	37
24	44463.52	89571.18	49640.43	201448.69	111643.06	224903.48	36
25	44489.57	89558.24	49676.69	201301.64	111659.19	224771.78	35
26	44515.62	89545.29	49712.97	201154.77	111675.33	224640.24	34
27	44541.67	89532.34	49749.25	201008.06	111691.49	224508.89	33
28	44567.71	89519.38	49785.54	200861.53	111707.66	224377.70	32
29	44593.75	89506.41	49821.85	200715.16	111723.84	224246.69	31
30	44619.78	89493.43	49858.16	200568.97	111740.04	224115.84	30

TANGENTIVM & SECANTIVM.

26	Sinus	Tangens	Secans	
30	44619.78	89493.43	49858.16	200568.97
31	44645.81	89480.45	49894.49	200422.95
32	44671.84	89467.46	49930.82	200277.10
33	44697.86	89454.46	49967.17	200131.42
34	44723.88	89441.45	50003.52	199985.90
35	44749.90	89428.44	50039.89	199840.56
36	44775.91	89415.42	50076.27	199695.39
37	44801.92	89402.39	50112.66	199550.38
38	44827.92	89389.36	50149.06	199405.54
39	44853.92	89376.32	50185.47	199260.87
40	44879.92	89363.27	50221.89	199116.37
41	44905.91	89350.21	50258.32	198972.04
42	44931.90	89337.14	50294.76	198827.87
43	44957.89	89324.06	50331.21	198683.87
44	44983.87	89310.98	50367.67	198540.03
45	45009.85	89297.89	50404.15	198396.36
46	45035.82	89284.79	50440.63	198252.86
47	45061.79	89271.69	50477.13	198109.52
48	45087.76	89258.58	50513.63	197966.35
49	45113.72	89245.46	50550.15	197823.34
50	45139.68	89232.33	50586.68	197680.50
51	45165.63	89219.20	50623.22	197537.82
52	45191.58	89206.06	50659.77	197395.31
53	45217.53	89192.91	50696.33	197252.96
54	45243.47	89179.75	50732.90	197110.77
55	45269.41	89166.59	50769.48	196968.74
56	45295.35	89153.42	50806.07	196826.88
57	45321.28	89140.24	50842.67	196685.18
58	45347.21	89127.05	50879.28	196543.64
59	45373.13	89113.85	50915.91	196402.27
60	45399.05	89100.65	50952.54	196261.05

27	Sinus	Tangens	Secans
0	45399.05	89100.65	50952.54
1	45424.97	89087.44	50989.19
2	45450.88	89074.22	51025.85
3	45476.79	89061.00	51062.52
4	45502.69	89047.77	51099.19
5	45528.59	89034.53	51135.88
6	45554.49	89021.28	51172.59
7	45580.38	89008.02	51209.30
8	45606.27	88994.76	51246.02
9	45632.16	88981.49	51282.75
10	45658.04	88968.21	51319.50
11	45683.92	88954.93	51356.25
12	45709.79	88941.64	51393.02
13	45735.66	88928.34	51429.80
14	45761.53	88915.03	51466.58
15	45787.39	88901.71	51503.38
16	45813.25	88888.39	51540.19
17	45839.10	88875.06	51577.02
18	45864.95	88861.72	51613.85
19	45890.80	88848.37	51650.69
20	45916.64	88835.02	51687.55
21	45942.48	88821.66	51724.41
22	45968.32	88808.29	51761.29
23	45994.15	88794.92	51798.18
24	46019.98	88781.54	51835.08
25	46045.80	88768.15	51871.99
26	46071.62	88754.75	51908.91
27	46097.44	88741.34	51945.84
28	46123.25	88727.93	51982.78
29	46149.06	88714.51	52019.74
30	46174.86	88701.08	52056.70

TANGENTIVM & SECANTIVM.

27	Sinus		Tangens		Secans		
30	46174.86	88701.08	52056.70	192098.21	112738.19	216568.06	30
31	46200.66	88687.64	52093.68	191961.86	112755.27	216447.12	29
32	46226.46	88674.20	52130.67	191825.65	112772.37	216326.33	28
33	46252.25	88660.75	52167.67	191689.60	112789.48	216205.70	27
34	46278.04	88647.29	52204.68	191553.70	112806.60	216085.22	26
35	46303.82	88633.83	52241.70	191417.95	112823.74	215964.89	25
36	46329.60	88620.36	52278.74	191282.36	112840.89	215844.71	24
37	46355.38	88606.88	52315.78	191146.91	112858.06	215724.69	23
38	46381.15	88593.39	52352.84	191011.62	112875.24	215604.82	22
39	46406.92	88579.89	52389.90	190876.47	112892.44	215485.10	21
40	46432.69	88566.39	52426.98	190741.47	112909.65	215365.53	20
41	46458.45	88552.88	52464.07	190606.63	112926.88	215246.11	19
42	46484.21	88539.36	52501.17	190471.93	112944.12	215126.84	18
43	46509.96	88525.83	52538.29	190337.38	112961.37	215007.72	17
44	46535.71	88512.30	52575.41	190202.99	112978.64	214888.75	16
45	46561.45	88498.76	52612.54	190068.74	112995.93	214769.93	15
46	46587.19	88485.21	52649.69	189934.64	113013.23	214651.27	14
47	46612.93	88471.66	52686.85	189800.68	113030.55	214532.75	13
48	46638.66	88458.10	52724.02	189666.88	113047.88	214414.37	12
49	46664.39	88444.53	52761.20	189533.22	113065.22	214296.15	11
50	46690.12	88430.95	52798.39	189399.71	113082.58	214178.08	10
51	46715.84	88417.36	52835.59	189266.34	113099.96	214060.15	9
52	46741.56	88403.77	52872.81	189133.13	113117.35	213942.38	8
53	46767.27	88390.17	52910.04	189000.06	113134.75	213824.75	7
54	46792.98	88376.56	52947.27	188867.13	113152.17	213707.26	6
55	46818.69	88362.94	52984.52	188734.36	113169.61	213589.93	5
56	46844.39	88349.32	53021.78	188601.72	113187.06	213472.74	4
57	46870.09	88335.69	53059.06	188469.24	113204.52	213355.70	3
58	46895.78	88322.05	53096.34	188336.90	113222.00	213238.80	2
59	46921.47	88308.41	53133.64	188204.70	113239.50	213122.05	1
60	46947.16	88294.76	53170.94	188072.65	113257.01	213005.45	0

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	Sinus	Tangens	Secans
0	46947.16	88294.76	53170.94
1	46972.84	88281.10	53208.26
2	46998.52	88267.43	53245.59
3	47024.19	88253.75	53282.93
4	47049.86	88240.07	53320.29
5	47075.53	88226.38	53357.65
6	47101.19	88212.68	53395.03
7	47126.85	88198.98	53432.42
8	47152.50	88185.27	53469.82
9	47178.15	88171.55	53507.23
10	47203.80	88157.82	53544.65
11	47229.44	88144.09	53582.08
12	47255.08	88130.35	53619.53
13	47280.71	88116.60	53656.99
14	47306.34	88102.84	53694.46
15	47331.97	88089.07	53731.94
16	47357.59	88075.30	53769.43
17	47383.21	88061.52	53806.94
18	47408.82	88047.73	53844.45
19	47434.43	88033.94	53881.98
20	47460.04	88020.14	53919.52
21	47485.64	88006.33	53957.07
22	47511.24	87992.51	53994.64
23	47536.83	87978.69	54032.21
24	47562.42	87964.86	54069.80
25	47588.01	87951.02	54107.40
26	47613.59	87937.17	54145.01
27	47639.17	87923.32	54182.63
28	47664.74	87909.46	54220.27
29	47690.31	87895.59	54257.91
30	47715.88	87881.71	54295.57
			188072.65
			187940.74
			187808.98
			187677.36
			187545.88
			187414.55
			187283.36
			187152.31
			187021.41
			186890.64
			186760.03
			186629.55
			186499.21
			186369.02
			186238.96
			186109.05
			185979.28
			185849.65
			185720.15
			185590.80
			185461.59
			185332.52
			185203.58
			185074.79
			184946.13
			184817.61
			184689.23
			184560.99
			184432.89
			184304.92
			184177.09
			113257.01
			113274.53
			113292.07
			113309.62
			113327.19
			113344.78
			113362.38
			113379.99
			113397.62
			213005.45
			212888.99
			212772.67
			212656.51
			212540.48
			212424.60
			212308.87
			212193.28
			212077.83
			211962.53
			211847.37
			211732.35
			211617.48
			211502.74
			211388.15
			211273.71
			211159.40
			211045.23
			210931.21
			210817.33
			210703.59
			210589.98
			210476.52
			210363.20
			210250.02
			210136.98
			210024.08
			209911.31
			209798.69
			209686.20
			209573.85

TANGENTIVM & SECANTIVM.

28	Sinus		Tangens		Secans		
30	47715.88	87881.71	54295.57	184177.09	113789.32	209573.85	30
31	47741.44	87867.83	54333.24	184049.39	113807.30	209461.64	29
32	47767.00	87853.94	54370.92	183921.84	113825.29	209349.57	28
33	47792.55	87840.04	54408.62	183794.42	113843.30	209237.64	27
34	47818.10	87826.13	54446.32	183667.13	113861.33	209125.84	26
35	47843.64	87812.22	54484.04	183539.99	113879.37	209014.18	25
36	47869.18	87798.30	54521.77	183412.97	113897.43	208902.65	24
37	47894.72	87784.37	54559.51	183286.10	113915.50	208791.27	23
38	47920.26	87770.43	54597.26	183159.36	113933.59	208680.02	22
39	47945.79	87756.49	54635.03	183032.75	113951.69	208568.90	21
40	47971.31	87742.54	54672.81	182906.28	113969.81	208457.92	20
41	47996.83	87728.58	54710.60	182779.94	113987.94	208347.08	19
42	48022.35	87714.61	54748.40	182653.74	114006.09	208236.37	18
43	48047.86	87700.64	54786.21	182527.67	114024.25	208125.80	17
44	48073.37	87686.66	54824.04	182401.73	114042.43	208015.36	16
45	48098.88	87672.67	54861.88	182275.93	114060.62	207905.06	15
46	48124.38	87658.68	54899.73	182150.26	114078.83	207794.89	14
47	48149.88	87644.68	54937.59	182024.73	114097.06	207684.86	13
48	48175.37	87630.67	54975.46	181899.32	114115.30	207574.96	12
49	48200.86	87616.65	55013.35	181774.05	114133.56	207465.19	11
50	48226.34	87602.62	55051.25	181648.92	114151.83	207355.56	10
51	48251.82	87588.59	55089.16	181523.91	114170.12	207246.06	9
52	48277.30	87574.55	55127.08	181399.04	114188.42	207136.70	8
53	48302.77	87560.50	55165.02	181274.30	114206.74	207027.46	7
54	48328.24	87546.45	55202.97	181149.69	114225.07	206918.36	6
55	48353.70	87532.39	55240.93	181025.21	114243.42	206809.40	5
56	48379.16	87518.32	55278.90	180900.86	114261.79	206700.56	4
57	48404.62	87504.24	55316.88	180776.64	114280.17	206591.86	3
58	48430.07	87490.16	55354.88	180652.56	114298.57	206483.28	2
59	48455.52	87476.07	55392.88	180528.60	114316.98	206374.84	1
60	48480.96	87461.97	55430.90	180404.78	114335.41	206266.53	0

CANON - SIN VVM

29	Sinus	Tangens	Secans
0	48480.96	87461.97	55430.90
1	48506.40	87447.86	55468.94
2	48531.84	87433.75	55506.98
3	48557.27	87419.63	55545.04
4	48582.70	87405.50	55583.11
5	48608.12	87391.36	55621.19
6	48633.54	87377.22	55659.29
7	48658.95	87363.07	55697.39
8	48684.36	87348.91	55735.51
9	48709.77	87334.75	55773.64
10	48735.17	87320.58	55811.79
11	48760.57	87306.40	55849.94
12	48785.97	87292.21	55888.11
13	48811.36	87278.01	55926.29
14	48836.74	87263.81	55964.48
15	48862.12	87249.60	56002.69
16	48887.50	87235.38	56040.91
17	48912.87	87221.16	56079.14
18	48938.24	87206.93	56117.38
19	48963.61	87192.69	56155.64
20	48988.97	87178.44	56193.91
21	49014.33	87164.19	56232.19
22	49039.68	87149.93	56270.48
23	49065.03	87135.66	56308.79
24	49090.37	87121.38	56347.10
25	49115.71	87107.10	56385.43
26	49141.05	87092.81	56423.78
27	49166.38	87078.51	56462.13
28	49191.71	87064.20	56500.50
29	49217.04	87049.89	56538.88
30	49242.36	87035.57	56577.28
			180404.78
			180281.08
			180157.51
			180034.08
			179910.77
			179787.59
			179664.54
			179541.62
			179418.83
			179296.16
			179173.62
			179051.21
			178928.93
			178806.78
			178684.75
			178562.85
			178441.07
			178319.43
			178197.90
			178076.51
			177955.24
			177834.09
			177713.07
			177592.18
			177471.41
			177350.76
			177230.24
			177109.85
			176989.58
			176869.43
			176749.40
			114335.41
			114353.85
			114372.31
			114390.78
			114409.27
			114427.78
			114446.30
			114464.84
			114483.39
			114501.96
			114520.55
			114539.15
			114557.76
			114576.39
			114595.04
			114613.70
			114632.38
			114651.08
			114669.79
			114688.52
			114707.26
			114726.02
			114744.79
			114763.58
			114782.39
			114801.21
			114820.05
			114838.90
			114857.77
			114876.65
			114895.55
			206266.53
			206158.36
			206050.31
			205942.39
			205834.60
			205726.95
			205619.42
			205512.03
			205404.76
			205297.62
			205190.61
			205083.73
			204976.98
			204870.36
			204763.86
			204657.50
			204551.26
			204445

TANGENTIVM & SECANTIVM.

29	Sinus	Tangens	Secans				
30	49242.36	87035.57	56577.28	176749.40	114895.55	203077.20	30
31	49267.67	87021.24	56615.68	176629.50	114914.47	202972.86	29
32	49292.98	87006.90	56654.10	176509.72	114933.40	202868.63	28
33	49318.29	86992.56	56692.53	176390.07	114952.35	202764.53	27
34	49343.59	86978.21	56730.98	176270.53	114971.32	202660.56	26
35	49368.89	86963.85	56769.44	176151.12	114990.30	202556.70	25
36	49394.19	86949.49	56807.91	176031.83	115009.30	202452.97	24
37	49419.48	86935.12	56846.39	175912.67	115028.31	202349.37	23
38	49444.77	86920.74	56884.88	175793.62	115047.34	202245.89	22
39	49470.05	86906.35	56923.39	175674.70	115066.38	202142.53	21
40	49495.33	86891.96	56961.91	175555.90	115085.44	202039.29	20
41	49520.60	86877.56	57000.45	175437.22	115104.52	201936.17	19
42	49545.87	86863.15	57038.99	175318.66	115123.61	201833.18	18
43	49571.13	86848.73	57077.55	175200.23	115142.72	201730.31	17
44	49596.39	86834.31	57116.12	175081.91	115161.85	201627.56	16
45	49621.65	86819.88	57154.71	174963.71	115180.99	201524.94	15
46	49646.90	86805.44	57193.31	174845.64	115200.15	201422.43	14
47	49672.15	86791.00	57231.92	174727.68	115219.32	201320.05	13
48	49697.40	86776.55	57270.54	174609.84	115238.51	201217.79	12
49	49722.64	86762.09	57309.18	174492.13	115257.72	201115.64	11
50	49747.87	86747.62	57347.83	174374.53	115276.94	201013.62	10
51	49773.10	86733.14	57386.49	174257.05	115296.18	200911.72	9
52	49798.33	86718.66	57425.16	174139.69	115315.43	200809.94	8
53	49823.55	86704.17	57463.85	174022.45	115334.70	200708.28	7
54	49848.77	86689.67	57502.55	173905.33	115353.99	200606.74	6
55	49873.99	86675.17	57541.26	173788.33	115373.29	200505.32	5
56	49899.20	86660.66	57579.99	173671.44	115392.61	200404.02	4
57	49924.41	86646.14	57618.73	173554.68	115411.95	200302.83	3
58	49949.61	86631.61	57657.48	173438.03	115431.30	200201.77	2
59	49974.81	86617.08	57696.25	173321.49	115450.67	200100.83	1
60	50000.00	86602.54	57735.03	173205.08	115470.05	200000.00	0

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C A N O N S I N V V M

30	Sinus		Tangens		Secans	
0	50000.00	86602.54	57735.03	173205.08	115470.05	200000.00
1	50025.19	86587.99	57773.82	173088.78	115489.45	199899.29
2	50050.38	86573.43	57812.62	172972.60	115508.87	199798.70
3	50075.56	86558.87	57851.44	172856.54	115528.30	199698.23
4	50100.74	86544.30	57890.27	172740.60	115547.75	199597.88
5	50125.91	86529.72	57929.11	172624.77	115567.22	199497.64
6	50151.08	86515.14	57967.97	172509.05	115586.70	199397.53
7	50176.24	86500.55	58006.84	172393.45	115606.20	199297.52
8	50201.40	86485.95	58045.73	172277.97	115625.72	199197.64
9	50226.55	86471.34	58084.62	172162.61	115645.25	199097.87
10	50251.70	86456.73	58123.53	172047.36	115664.80	198998.22
11	50276.85	86442.11	58162.45	171932.22	115684.36	198898.69
12	50301.99	86427.48	58201.39	171817.20	115703.94	198799.27
13	50327.13	86412.84	58240.34	171702.30	115723.54	198699.97
14	50352.27	86398.20	58279.30	171587.51	115743.15	198600.80
15	50377.40	86383.55	58318.28	171472.83	115762.78	198501.72
16	50402.53	86368.89	58357.27	171358.27	115782.43	198402.76
17	50427.65	86354.23	58396.27	171243.82	115802.09	198303.93
18	50452.77	86339.56	58435.28	171129.49	115821.77	198205.20
19	50477.88	86324.88	58474.31	171015.27	115841.47	198106.59
20	50502.99	86310.19	58513.35	170901.16	115861.18	198008.10
21	50528.09	86295.49	58552.41	170787.17	115880.91	197909.72
22	50553.19	86280.79	58591.48	170673.29	115900.65	197811.46
23	50578.28	86266.08	58630.56	170559.53	115920.41	197713.31
24	50603.37	86251.36	58669.65	170445.87	115940.19	197615.27
25	50628.46	86236.64	58708.76	170332.33	115959.99	197517.35
26	50653.55	86221.91	58747.88	170218.90	115979.80	197419.54
27	50678.63	86207.17	58787.02	170105.59	115999.63	197321.85
28	50703.70	86192.43	58826.17	169992.38	116019.47	197224.26
29	50728.77	86177.68	58865.33	169879.29	116039.33	197126.80
30	50753.84	86162.92	58904.50	169766.31	116059.21	197029.44

TANGENTIVM & SECANTIVM.

30	Sinus		Tangens		Secans		
30	50753.84	86162.92	58904.50	169766.31	116059.21	197029.44	30
31	50778.90	86148.15	58943.69	169653.44	116079.11	196932.20	29
32	50803.96	86133.37	58982.89	169540.69	116099.02	196835.07	28
33	50829.01	86118.59	59022.11	169428.04	116118.95	196738.05	27
34	50854.06	86103.80	59061.34	169315.50	116138.89	196641.14	26
35	50879.10	86089.00	59100.58	169203.08	116158.85	196544.34	25
36	50904.14	86074.20	59139.83	169090.77	116178.83	196447.67	24
37	50929.18	86059.39	59179.10	168978.56	116198.82	196351.10	23
38	50954.21	86044.57	59218.39	168866.47	116218.83	196254.64	22
39	50979.24	86029.74	59257.68	168754.49	116238.86	196158.29	21
40	51004.26	86014.91	59296.99	168642.61	116258.91	196062.06	20
41	51029.28	86000.07	59336.32	168530.85	116278.97	195965.93	19
42	51054.29	85985.22	59375.66	168419.19	116299.05	195869.92	18
43	51079.30	85970.37	59415.01	168307.65	116319.14	195774.01	17
44	51104.31	85955.51	59454.37	168196.21	116339.25	195678.22	16
45	51129.31	85940.64	59493.75	168084.89	116359.38	195582.54	15
46	51154.31	85925.76	59533.14	167973.67	116379.53	195486.97	14
47	51179.30	85910.88	59572.54	167862.56	116399.69	195391.50	13
48	51204.29	85895.99	59611.96	167751.56	116419.87	195296.15	12
49	51229.27	85881.09	59651.40	167640.67	116440.07	195200.91	11
50	51254.25	85866.18	59690.84	167529.88	116460.28	195105.77	10
51	51279.22	85851.27	59730.30	167419.21	116480.51	195010.75	9
52	51304.19	85836.35	59769.78	167308.64	116500.76	194915.83	8
53	51329.16	85821.42	59809.27	167198.18	116521.02	194821.02	7
54	51354.12	85806.49	59848.77	167087.82	116541.30	194726.32	6
55	51379.08	85791.55	59888.28	166977.58	116561.60	194631.73	5
56	51404.04	85776.60	59927.81	166867.44	116581.91	194537.25	4
57	51428.99	85761.64	59967.35	166757.41	116602.24	194442.88	3
58	51453.93	85746.68	60006.91	166647.48	116622.59	194348.61	2
59	51478.87	85731.71	60046.48	166537.66	116642.96	194254.45	1
60	51503.81	85716.73	60086.06	166427.95	116663.34	194160.40	0

CANON SINVVVM

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TANGENTIVM & SECANTIVM.

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C A N O N S I N V V M

32	Sinus		Tangens		Secans		
0	52991.93	84804.81	62486.94	160033.45	117917.84	188707.99	60
1	53016.59	84789.39	62527.39	159929.91	117939.28	188620.19	59
2	53041.25	84773.96	62567.86	159826.47	117960.74	188532.49	58
3	53065.91	84758.53	62608.34	159723.12	117982.22	188444.89	57
4	53090.56	84743.09	62648.84	159619.87	118003.72	188357.38	56
5	53115.21	84727.64	62689.35	159516.72	118025.23	188269.97	55
6	53139.86	84712.19	62729.88	159413.66	118046.76	188182.66	54
7	53164.50	84696.73	62770.42	159310.70	118068.31	188095.45	53
8	53189.13	84681.26	62810.98	159207.83	118089.88	188008.33	52
9	53213.76	84665.78	62851.56	159105.05	118111.47	187921.31	51
10	53238.39	84650.30	62892.15	159002.38	118133.07	187834.38	50
11	53263.01	84634.81	62932.75	158899.79	118154.69	187747.55	49
12	53287.63	84619.31	62973.36	158797.30	118176.33	187660.82	48
13	53312.24	84603.81	63013.99	158694.91	118197.99	187574.18	47
14	53336.85	84588.30	63054.64	158592.61	118219.66	187487.64	46
15	53361.45	84572.78	63095.30	158490.41	118241.35	187401.20	45
16	53386.05	84557.25	63135.98	158388.30	118263.06	187314.85	44
17	53410.64	84541.72	63176.67	158286.28	118284.79	187228.59	43
18	53435.23	84526.18	63217.38	158184.36	118306.54	187142.43	42
19	53459.82	84510.63	63258.10	158082.53	118328.30	187056.37	41
20	53484.40	84495.08	63298.83	157980.79	118350.08	186970.40	40
21	53508.98	84479.52	63339.58	157879.15	118371.88	186884.53	39
22	53533.55	84463.95	63380.35	157777.60	118393.70	186798.75	38
23	53558.12	84448.37	63421.13	157676.15	118415.54	186713.06	37
24	53582.68	84432.79	63461.93	157574.79	118437.40	186627.47	36
25	53607.24	84417.20	63502.74	157473.52	118459.27	186541.97	35
26	53631.79	84401.60	63543.57	157372.34	118481.16	186456.57	34
27	53656.34	84386.00	63584.41	157271.26	118503.07	186371.26	33
28	53680.88	84370.39	63625.27	157170.26	118525.00	186286.05	32
29	53705.42	84354.77	63666.14	157069.36	118546.94	186200.93	31
30	53729.96	84339.14	63707.03	156968.56	118568.91	186115.90	30

TANGENTIVM & SECANTIVM.

L 2

CANON SIN VVM

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TANGENTIVM & SECANTIVM.

33	Sinus	Tangens	Secans	
30	55193.70	83388.58	66188.56	151083.52
31	55217.95	83372.52	66230.40	150988.07
32	55242.20	83356.45	66272.26	150892.71
33	55266.45	83340.38	66314.13	150797.43
34	55290.69	83324.30	66356.02	150702.24
35	55314.92	83308.21	66397.92	150607.13
36	55339.15	83292.12	66439.84	150512.10
37	55363.38	83276.02	66481.78	150417.16
38	55387.60	83259.91	66523.73	150322.30
39	55411.82	83243.80	66565.70	150227.52
40	55436.03	83227.68	66607.69	150132.82
41	55460.24	83211.55	66649.69	150038.20
42	55484.44	83195.41	66691.71	149943.67
43	55508.64	83179.27	66733.75	149849.22
44	55532.83	83163.12	66775.80	149754.86
45	55557.02	83146.96	66817.87	149660.58
46	55581.21	83130.79	66859.95	149566.38
47	55605.39	83114.62	66902.05	149472.26
48	55629.56	83098.44	66944.17	149378.22
49	55653.73	83082.26	66986.30	149284.26
50	55677.90	83066.07	67028.45	149190.38
51	55702.06	83049.87	67070.62	149096.59
52	55726.21	83033.66	67112.80	149002.88
53	55750.36	83017.45	67155.00	148909.25
54	55774.51	83001.23	67197.21	148815.70
55	55798.65	82985.00	67239.44	148722.23
56	55822.79	82968.76	67281.69	148628.84
57	55846.92	82952.52	67323.96	148535.53
58	55871.05	82936.27	67366.24	148442.30
59	55895.17	82920.02	67408.54	148349.16
60	55919.29	82903.76	67450.85	148256.10
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34	Sinus	Tangens	Secans
0	55919.29	82903.76	67450.85
1	55943.40	82887.49	67493.18
2	55967.51	82871.21	67535.53
3	55991.61	82854.93	67577.90
4	56015.71	82838.64	67620.28
5	56039.81	82822.34	67662.68
6	56063.90	82806.03	67705.09
7	56087.98	82789.72	67747.52
8	56112.06	82773.40	67789.97
9	56136.14	82757.07	67832.44
10	56160.21	82740.74	67874.92
11	56184.28	82724.40	67917.42
12	56208.34	82708.05	67959.93
13	56232.39	82691.70	68002.46
14	56256.44	82675.34	68045.01
15	56280.49	82658.97	68087.58
16	56304.53	82642.60	68130.16
17	56328.57	82626.22	68172.76
18	56352.60	82609.83	68215.38
19	56376.63	82593.43	68258.01
20	56400.65	82577.03	68300.66
21	56424.67	82560.62	68343.33
22	56448.69	82544.20	68386.01
23	56472.70	82527.78	68428.71
24	56496.70	82511.35	68471.43
25	56520.70	82494.91	68514.17
26	56544.69	82478.47	68556.92
27	56568.68	82462.02	68599.69
28	56592.67	82445.56	68642.47
29	56616.65	82429.09	68685.27
30	56640.62	82412.62	68728.10
			148256.10
			148163.11
			148070.21
			147977.38
			147884.63
			147791.97
			147699.38
			147606.88
			147514.45
			147422.10
			147329.83
			147237.64
			147145.53
			147053.50
			146961.55
			146869.67
			146777.87
			146686.16
			146594.52
			146502.96
			146411.47
			146320.07
			146228.74
			146137.49
			146046.32
			145955.22
			145864.20
			145773.26
			145682.40
			145591.61
			145500.90
			120621.80
			120645.48
			120669.18
			120692.89
			120716.62
			120740.37
			120764.14
			120787.93
			120811.75
			120835.59
			120859.44
			120883.31
			120907.20
			120931.12
			120955.05
			120979.00
			121002.97
			121026.96
			121050.97
			121075.00
			121099.05
			121123.12
			121147.21
			121171.32
			121195.45
			121219.60
			121243.77
			121267.96
			121292.17
			121316.40
			121340.64
			178829.16
			178752.08
			178675.08
			178598.17
			178521.33
			178444.57
			178367.90
			178291.31
			178214.79
			178138.36
			178062.01
			177985.74
			177909.55
			177833.43
			177757.40
			177681.45
			177605.58
			177529

TANGENTIVM & SECANTIVM.

34	Sinus		Tangens		Secans		
30	56640.62	82412.62	68728.10	145500.90	121340.64	176551.73	30
31	56664.59	82396.14	68770.94	145410.27	121364.91	176477.04	29
32	56688.56	82379.65	68813.79	145319.71	121389.20	176402.43	28
33	56712.52	82363.16	68856.66	145229.23	121413.51	176327.91	27
34	56736.48	82346.66	68899.55	145138.83	121437.83	176253.45	26
35	56760.43	82330.15	68942.46	145048.50	121462.18	176179.08	25
36	56784.37	82313.64	68985.38	144958.25	121486.55	176104.78	24
37	56808.31	82297.12	69028.32	144868.08	121510.94	176030.56	23
38	56832.25	82280.59	69071.28	144777.98	121535.35	175956.42	22
39	56856.18	82264.05	69114.25	144687.96	121559.78	175882.36	21
40	56880.11	82247.51	69157.24	144598.01	121584.23	175808.37	20
41	56904.03	82230.96	69200.25	144508.14	121608.70	175734.46	19
42	56927.95	82214.40	69243.28	144418.34	121633.19	175660.63	18
43	56951.86	82197.84	69286.33	144328.62	121657.70	175586.87	17
44	56975.77	82181.27	69329.39	144238.97	121682.23	175513.19	16
45	56999.68	82164.69	69372.47	144149.40	121706.78	175439.59	15
46	57023.58	82148.11	69415.57	144059.91	121731.35	175366.07	14
47	57047.47	82131.52	69458.68	143970.49	121755.94	175292.62	13
48	57071.36	82114.92	69501.81	143881.14	121780.55	175219.24	12
49	57095.24	82098.31	69544.96	143791.87	121805.18	175145.94	11
50	57119.12	82081.70	69588.13	143702.68	121829.83	175072.73	10
51	57142.99	82065.08	69631.31	143613.56	121854.50	174999.58	9
52	57166.86	82048.46	69674.51	143524.51	121879.19	174926.51	8
53	57190.73	82031.83	69717.73	143435.54	121903.90	174853.52	7
54	57214.59	82015.19	69760.97	143346.64	121928.64	174780.60	6
55	57238.44	81998.54	69804.22	143257.81	121953.39	174707.76	5
56	57262.29	81981.89	69847.49	143169.06	121978.16	174634.99	4
57	57286.14	81965.23	69890.78	143080.39	122002.96	174562.30	3
58	57309.98	81948.56	69934.09	142991.78	122027.77	174489.69	2
59	57333.81	81931.89	69977.41	142903.26	122052.60	174417.15	1
60	57357.64	81915.21	70020.75	142814.80	122077.46	174344.68	0

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35	Sinus		Tangens		Secans		
0	57357.64	81915.21	70020.75	142814.80	122077.46	174344.68	60
1	57381.47	81898.52	70064.11	142726.42	122102.33	174272.29	59
2	57405.29	81881.82	70107.49	142638.11	122127.23	174199.97	58
3	57429.11	81865.12	70150.89	142549.87	122152.15	174127.73	57
4	57452.92	81848.41	70194.30	142461.71	122177.08	174055.56	56
5	57476.72	81831.69	70237.73	142373.62	122202.04	173983.47	55
6	57500.52	81814.97	70281.18	142285.61	122227.02	173911.45	54
7	57524.32	81798.24	70324.65	142197.66	122252.02	173839.51	53
8	57548.11	81781.50	70368.13	142109.79	122277.03	173767.64	52
9	57571.90	81764.76	70411.63	142022.00	122302.07	173695.85	51
10	57595.68	81748.01	70455.15	141934.27	122327.13	173624.13	50
11	57619.46	81731.25	70498.69	141846.62	122352.21	173552.47	49
12	57643.23	81714.49	70542.24	141759.04	122377.32	173480.90	48
13	57667.00	81697.72	70585.81	141671.53	122402.44	173409.41	47
14	57690.76	81680.94	70629.40	141584.09	122427.58	173337.98	46
15	57714.52	81664.15	70673.01	141496.73	122452.74	173266.63	45
16	57738.27	81647.36	70716.64	141409.43	122477.93	173195.35	44
17	57762.02	81630.56	70760.29	141322.21	122503.13	173124.14	43
18	57785.76	81613.76	70803.95	141235.06	122528.36	173053.01	42
19	57809.50	81596.95	70847.63	141147.99	122553.61	172981.95	41
20	57833.23	81580.13	70891.33	141060.98	122578.87	172910.96	40
21	57856.96	81563.30	70935.05	140974.05	122604.16	172840.05	39
22	57880.68	81546.47	70978.78	140887.18	122629.47	172769.21	38
23	57904.40	81529.63	71022.53	140800.39	122654.80	172698.44	37
24	57928.12	81512.78	71066.30	140713.67	122680.15	172627.74	36
25	57951.83	81495.93	71110.09	140627.02	122705.52	172557.12	35
26	57975.53	81479.06	71153.90	140540.44	122730.91	172486.57	34
27	57999.23	81462.19	71197.73	140453.93	122756.33	172416.09	33
28	58022.92	81445.32	71241.57	140367.49	122781.76	172345.68	32
29	58046.61	81428.44	71285.43	140281.13	122807.21	172275.34	31
30	58070.30	81411.55	71329.31	140194.83	122832.69	172205.08	30

TANGENTIVM & SECANTIVM.

35	Sinus		Tangens		Secans		
30	58070.30	81411.55	71329.31	140194.83	122832.69	172205.08	30
31	58093.98	81394.65	71373.21	140108.60	122858.19	172134.89	29
32	58117.55	81377.75	71417.13	140022.45	122883.71	172064.77	28
33	58141.32	81360.84	71461.06	139936.36	122909.25	171994.72	27
34	58164.98	81343.93	71505.01	139850.34	122934.81	171924.75	26
35	58188.64	81327.01	71548.98	139764.40	122960.39	171854.84	25
36	58212.30	81310.08	71592.97	139678.52	122985.99	171785.01	24
37	58235.95	81293.14	71636.98	139592.72	123011.61	171715.25	23
38	58259.59	81276.20	71681.01	139506.98	123037.25	171645.56	22
39	58283.23	81259.25	71725.05	139421.31	123062.92	171575.94	21
40	58306.87	81242.29	71769.11	139335.71	123088.61	171506.39	20
41	58330.50	81225.32	71813.19	139250.18	123114.32	171436.91	19
42	58354.12	81208.35	71857.29	139164.73	123140.05	171367.50	18
43	58377.74	81191.37	71901.41	139079.34	123165.80	171298.17	17
44	58401.36	81174.39	71945.55	138994.01	123191.57	171228.90	16
45	58424.97	81157.40	71989.70	138908.76	123217.36	171159.70	15
46	58448.57	81140.40	72033.87	138823.58	123243.17	171090.58	14
47	58472.17	81123.39	72078.06	138738.46	123269.00	171021.52	13
48	58495.77	81106.38	72122.27	138653.42	123294.86	170952.54	12
49	58519.36	81089.36	72166.50	138568.44	123320.74	170883.62	11
50	58542.94	81072.33	72210.75	138483.53	123346.64	170814.78	10
51	58566.52	81055.30	72255.02	138398.69	123372.56	170746.00	9
52	58590.10	81038.26	72299.31	138313.92	123398.50	170677.30	8
53	58613.67	81021.21	72343.61	138229.22	123424.46	170608.66	7
54	58637.24	81004.16	72387.93	138144.58	123450.44	170540.10	6
55	58660.80	80987.10	72432.27	138060.01	123476.45	170471.60	5
56	58684.35	80970.03	72476.63	137975.51	123502.48	170403.18	4
57	58707.90	80952.96	72521.01	137891.08	123528.52	170334.82	3
58	58731.45	80935.88	72565.41	137806.72	123554.59	170266.53	2
59	58754.99	80918.79	72609.83	137722.42	123580.68	170198.31	1
60	58778.53	80901.70	72654.26	137638.19	123606.80	170130.16	0

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36	Sinus		Tangens		Secans		
0	58778.53	80901.70	72654.26	137638.19	123606.80	170130.16	60
1	58802.06	80884.60	72698.71	137554.03	123632.94	170062.08	59
2	58825.58	80867.49	72743.18	137469.94	123659.09	169994.07	58
3	58849.10	80850.37	72787.67	137385.91	123685.26	169926.12	57
4	58872.62	80833.25	72832.18	137301.95	123711.48	169858.25	56
5	58896.13	80816.12	72876.71	137218.05	123737.68	169790.44	55
6	58919.64	80798.99	72921.26	137134.23	123763.93	169722.71	54
7	58943.14	80781.85	72965.82	137050.47	123790.19	169655.04	53
8	58966.63	80764.70	73010.40	136966.78	123816.47	169587.43	52
9	58990.12	80747.54	73055.01	136883.15	123842.78	169519.90	51
10	59013.61	80730.38	73099.63	136799.59	123869.11	169452.44	50
11	59037.09	80713.21	73144.27	136716.10	123895.46	169385.04	49
12	59060.57	80696.03	73188.94	136632.67	123921.83	169317.71	48
13	59084.04	80678.85	73233.62	136549.31	123948.22	169250.45	47
14	59107.50	80661.66	73278.31	136466.02	123974.64	169183.26	46
15	59130.96	80644.46	73323.03	136382.79	124001.08	169116.13	45
16	59154.42	80627.26	73367.77	136299.63	124027.54	169049.07	44
17	59177.87	80610.05	73412.53	136216.53	124054.02	168982.08	43
18	59201.32	80592.83	73457.30	136133.50	124080.52	168915.16	42
19	59224.76	80575.60	73502.10	136050.54	124107.04	168848.30	41
20	59248.19	80558.37	73546.91	135967.64	124133.59	168781.51	40
21	59271.62	80541.13	73591.74	135884.81	124160.16	168714.79	39
22	59295.05	80523.89	73636.60	135802.04	124186.75	168648.14	38
23	59318.47	80506.64	73681.47	135719.34	124213.36	168581.55	37
24	59341.89	80489.38	73726.36	135636.70	124239.99	168515.03	36
25	59365.30	80472.11	73771.27	135554.13	124266.65	168448.57	35
26	59388.71	80454.84	73816.20	135471.62	124293.33	168382.18	34
27	59412.11	80437.56	73861.15	135389.18	124320.03	168315.86	33
28	59435.50	80420.28	73906.11	135306.80	124346.75	168249.61	32
29	59458.89	80402.99	73951.10	135224.49	124373.49	168183.42	31
30	59482.28	80385.69	73996.11	135142.24	124400.26	168117.30	30

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TANGENTIVM & SECANTIVM.

36	Sinus		Tangens		Secans		
30	59482.28	80385.69	73996.11	135142.24	124400.26	168117.30	30
31	59505.66	80368.38	74041.14	135060.06	124427.05	168051.24	29
32	59529.03	80351.07	74086.18	134977.94	124453.86	167985.25	28
33	59552.40	80333.75	74131.24	134895.89	124480.69	167919.33	27
34	59575.77	80316.42	74176.33	134813.90	124507.54	167853.47	26
35	59599.13	80299.09	74221.43	134731.97	124534.42	167787.68	25
36	59622.49	80281.75	74266.55	134650.11	124561.31	167721.95	24
37	59645.84	80264.40	74311.70	134568.32	124588.23	167656.29	23
38	59669.18	80247.05	74356.86	134486.58	124615.18	167590.70	22
39	59692.52	80229.69	74402.04	134404.92	124642.14	167525.17	21
40	59715.86	80212.32	74447.24	134323.31	124669.13	167459.70	20
41	59739.19	80194.94	74492.46	134241.77	124696.14	167394.30	19
42	59762.51	80177.56	74537.70	134160.29	124723.17	167328.97	18
43	59785.83	80160.17	74582.96	134078.88	124750.22	167263.70	17
44	59809.15	80142.78	74628.24	133997.53	124777.30	167198.50	16
45	59832.46	80125.38	74673.54	133916.24	124804.40	167133.36	15
46	59855.76	80107.97	74718.86	133835.02	124831.52	167068.28	14
47	59879.06	80090.56	74764.20	133753.86	124858.66	167003.28	13
48	59902.36	80073.14	74809.56	133672.76	124885.83	166938.33	12
49	59925.65	80055.71	74854.94	133591.72	124913.02	166873.45	11
50	59948.93	80038.27	74900.33	133510.75	124940.23	166808.64	10
51	59972.21	80020.83	74945.75	133429.84	124967.46	166743.89	9
52	59995.49	80003.38	74991.19	133349.00	124994.71	166679.20	8
53	60018.76	79985.93	75036.65	133268.22	125021.99	166614.58	7
54	60042.02	79968.47	75082.12	133187.49	125049.29	166550.02	6
55	60065.28	79951.00	75127.62	133106.84	125076.61	166485.52	5
56	60088.53	79933.52	75173.14	133026.24	125103.96	166421.09	4
57	60111.78	79916.04	75218.67	132945.71	125131.33	166356.73	3
58	60135.03	79898.55	75264.23	132865.24	125158.72	166292.43	2
59	60158.27	79881.05	75309.81	132784.83	125186.13	166228.19	1
60	60181.50	79863.55	75355.40	132704.48	125213.57	166164.01	0

37	Sinus		Tangens		Secans		
0	60181.50	79863.55	75355.40	132704.48	125213.57	166164.01	60
1	60204.73	79846.04	75401.02	132624.20	125241.02	166099.90	59
2	60227.95	79828.52	75446.66	132543.97	125268.50	166035.85	58
3	60251.17	79811.00	75492.32	132463.81	125296.01	165971.87	57
4	60274.39	79793.47	75537.99	132383.71	125323.53	165907.95	56
5	60297.60	79775.93	75583.69	132303.68	125351.08	165844.09	55
6	60320.80	79758.39	75629.41	132223.70	125378.65	165780.30	54
7	60344.00	79740.84	75675.14	132143.79	125406.25	165716.57	53
8	60367.19	79723.28	75720.90	132063.93	125433.87	165652.90	52
9	60390.38	79705.72	75766.68	131984.14	125461.51	165589.29	51
10	60413.56	79688.15	75812.48	131904.41	125489.17	165525.75	50
11	60436.74	79670.57	75858.29	131824.74	125516.85	165462.27	49
12	60459.91	79652.99	75904.13	131745.13	125544.56	165398.85	48
13	60483.08	79635.40	75949.99	131665.59	125572.29	165335.50	47
14	60506.24	79617.80	75995.87	131586.10	125600.05	165272.21	46
15	60529.40	79600.20	76041.77	131506.68	125627.82	165208.98	45
16	60552.55	79582.59	76087.69	131427.31	125655.62	165145.81	44
17	60575.70	79564.97	76133.63	131348.01	125683.45	165082.70	43
18	60598.84	79547.35	76179.59	131268.76	125711.29	165019.66	42
19	60621.98	79529.72	76225.57	131189.58	125739.16	164956.68	41
20	60645.11	79512.08	76271.57	131110.46	125767.05	164893.76	40
21	60668.23	79494.43	76317.59	131031.40	125794.97	164830.90	39
22	60691.35	79476.78	76363.63	130952.39	125822.91	164768.11	38
23	60714.47	79459.12	76409.69	130873.45	125850.87	164705.37	37
24	60737.58	79441.46	76455.77	130794.57	125878.85	164642.70	36
25	60760.69	79423.79	76501.88	130715.75	125906.86	164580.09	35
26	60783.79	79406.11	76548.00	130636.99	125934.89	164517.54	34
27	60806.89	79388.43	76594.14	130558.28	125962.94	164455.06	33
28	60829.98	79370.74	76640.31	130479.64	125991.02	164392.63	32
29	60853.06	79353.04	76686.49	130401.06	126019.12	164330.27	31
30	60876.14	79335.33	76732.70	130322.54	126047.24	164267.96	30

37	Sinus		Tangens		Secans		
30	60876.14	79335.33	76732.70	130322.54	126047.24	164267.96	30
31	60899.22	79317.62	76778.93	130244.07	126075.39	164205.72	29
32	60922.29	79299.90	76825.17	130165.67	126103.56	164143.54	28
33	60945.35	79282.18	76871.44	130087.32	126131.75	164081.42	27
34	60968.41	79264.45	76917.73	130009.04	126159.97	164019.36	26
35	60991.47	79246.71	76964.04	129930.81	126188.20	163957.36	25
36	61014.52	79228.96	77010.37	129852.65	126216.46	163895.42	24
37	61037.56	79211.21	77056.72	129774.54	126244.75	163833.55	23
38	61060.60	79193.45	77103.09	129696.49	126273.06	163771.73	22
39	61083.63	79175.69	77149.48	129618.50	126301.40	163709.97	21
40	61106.66	79157.92	77195.89	129540.57	126329.75	163648.28	20
41	61129.68	79140.14	77242.33	129462.69	126358.13	163586.64	19
42	61152.70	79122.35	77288.79	129384.88	126386.53	163525.07	18
43	61175.72	79104.56	77335.26	129307.12	126414.96	163463.55	17
44	61198.73	79086.76	77381.75	129229.43	126443.41	163402.10	16
45	61221.73	79068.96	77428.27	129151.79	126471.88	163340.70	15
46	61244.73	79051.15	77474.81	129074.21	126500.38	163279.37	14
47	61267.72	79033.33	77521.37	128996.69	126528.90	163218.09	13
48	61290.71	79015.50	77567.95	128919.22	126557.45	163156.88	12
49	61313.69	78997.67	77614.55	128841.82	126586.01	163095.72	11
50	61336.66	78979.83	77661.17	128764.47	126614.60	163034.62	10
51	61359.63	78961.98	77707.82	128687.18	126643.22	162973.59	9
52	61382.60	78944.13	77754.48	128609.95	126671.86	162912.61	8
53	61405.56	78926.27	77801.17	128532.77	126700.52	162851.69	7
54	61428.52	78908.41	77847.88	128455.66	126729.21	162790.83	6
55	61451.47	78890.54	77894.60	128378.60	126757.92	162730.03	5
56	61474.42	78872.66	77941.35	128301.60	126786.65	162669.29	4
57	61497.36	78854.77	77988.12	128224.66	126815.41	162608.61	3
58	61520.29	78836.88	78034.92	128147.76	126844.19	162547.99	2
59	61543.22	78818.98	78081.73	128070.93	126872.99	162487.43	1
60	61566.15	78801.07	78128.56	127994.16	126901.82	162426.92	0

CANON SIN VVM

38	Sinus		Tangens		Secans		
0	61566.15	78801.07	78128.56	127994.16	126901.82	162426.92	60
1	61589.07	78783.16	78175.42	127917.45	126930.67	162366.48	59
2	61611.98	78765.24	78222.29	127840.79	126959.55	162306.09	58
3	61634.89	78747.32	78269.19	127764.19	126988.45	162245.76	57
4	61657.79	78729.39	78316.11	127687.64	127017.37	162185.49	56
5	61680.69	78711.45	78363.05	127611.16	127046.32	162125.28	55
6	61703.59	78693.50	78410.02	127534.73	127075.29	162065.13	54
7	61726.48	78675.55	78457.00	127458.36	127104.29	162005.04	53
8	61749.36	78657.59	78504.00	127382.04	127133.31	161945.00	52
9	61772.24	78639.62	78551.03	127305.78	127162.35	161885.02	51
10	61795.11	78621.65	78598.08	127229.57	127191.42	161825.10	50
11	61817.98	78603.67	78645.15	127153.42	127220.51	161765.24	49
12	61840.84	78585.69	78692.24	127077.33	127249.63	161705.44	48
13	61863.70	78567.70	78739.35	127001.30	127278.77	161645.69	47
14	61886.55	78549.70	78786.49	126925.32	127307.94	161586.00	46
15	61909.40	78531.69	78833.64	126849.39	127337.12	161526.37	45
16	61932.24	78513.68	78880.82	126773.53	127366.34	161466.80	44
17	61955.07	78495.66	78928.02	126697.72	127395.57	161407.28	43
18	61977.90	78477.64	78975.24	126621.96	127424.84	161347.83	42
19	62000.73	78459.61	79022.48	126546.26	127454.12	161288.43	41
20	62023.55	78441.57	79069.75	126470.62	127483.43	161229.08	40
21	62046.36	78423.52	79117.03	126395.03	127512.76	161169.80	39
22	62069.17	78405.47	79164.34	126319.50	127542.12	161110.57	38
23	62091.98	78387.41	79211.67	126244.02	127571.50	161051.40	37
24	62114.78	78369.35	79259.02	126168.60	127600.91	160992.28	36
25	62137.57	78351.28	79306.40	126093.23	127630.34	160933.23	35
26	62160.36	78333.20	79353.79	126017.92	127659.80	160874.23	34
27	62183.14	78315.11	79401.21	125942.67	127689.28	160815.28	33
28	62205.92	78297.02	79448.65	125867.47	127718.78	160756.40	32
29	62228.69	78278.92	79496.11	125792.32	127748.31	160697.57	31
30	62251.46	78260.82	79543.59	125717.23	127777.87	160638.79	30

TANGENTIVM & SECANTIVM.

38	Sinus		Tangens		Secans		
30	62251.46	78260.82	79543.59	125717.23	127777.87	160638.79	30
31	62274.22	78242.71	79591.10	125642.19	127807.45	160580.08	29
32	62296.98	78224.59	79638.62	125567.21	127837.05	160521.42	28
33	62319.73	78206.46	79686.17	125492.29	127866.67	160462.81	27
34	62342.48	78188.33	79733.74	125417.42	127896.32	160404.26	26
35	62365.22	78170.19	79781.34	125342.60	127926.00	160345.77	25
36	62387.96	78152.05	79828.95	125267.84	127955.70	160287.34	24
37	62410.69	78133.90	79876.59	125193.13	127985.43	160228.96	23
38	62433.42	78115.74	79924.25	125118.48	128015.18	160170.64	22
39	62456.14	78097.57	79971.93	125043.88	128044.95	160112.37	21
40	62478.85	78079.40	80019.63	124969.33	128074.75	160054.16	20
41	62501.56	78061.22	80067.36	124894.84	128104.57	159996.00	19
42	62524.26	78043.04	80115.11	124820.40	128134.42	159937.90	18
43	62546.96	78024.85	80162.88	124746.02	128164.30	159879.86	17
44	62569.66	78006.65	80210.67	124671.69	128194.20	159821.87	16
45	62592.35	77988.45	80258.48	124597.42	128224.12	159763.94	15
46	62615.03	77970.24	80306.32	124523.20	128254.07	159706.06	14
47	62637.71	77952.02	80354.18	124449.03	128284.04	159648.24	13
48	62660.38	77933.80	80402.06	124374.92	128314.04	159590.47	12
49	62683.05	77915.57	80449.97	124300.86	128344.06	159532.76	11
50	62705.71	77897.33	80497.90	124226.85	128374.11	159475.11	10
51	62728.37	77879.08	80545.85	124152.90	128404.18	159417.51	9
52	62751.02	77860.83	80593.82	124079.00	128434.28	159359.96	8
53	62773.66	77842.57	80641.81	124005.15	128464.40	159302.47	7
54	62796.30	77824.31	80689.83	123931.36	128494.55	159245.04	6
55	62818.94	77806.04	80737.87	123857.62	128524.72	159187.66	5
56	62841.57	77787.77	80785.93	123783.93	128554.92	159130.33	4
57	62864.20	77769.49	80834.01	123710.30	128585.14	159073.06	3
58	62886.82	77751.20	80882.12	123636.72	128615.39	159015.84	2
59	62909.43	77732.90	80930.25	123563.19	128645.66	158958.68	1
60	62932.04	77714.60	80978.40	123489.72	128675.96	158901.57	0

C A N O N S I N V V M

39	Sinus		Tangens		Secans		
0	62932.04	77714.60	80978.40	123489.72	128675.96	158901.57	60
1	62954.64	77696.29	81026.58	123416.29	128706.28	158844.52	59
2	62977.24	77677.97	81074.78	123342.92	128736.63	158787.52	58
3	62999.83	77659.65	81123.00	123269.61	128767.00	158730.58	57
4	63022.42	77641.32	81171.24	123196.34	128797.40	158673.69	56
5	63045.00	77622.98	81219.51	123123.13	128827.82	158616.85	55
6	63067.58	77604.64	81267.80	123049.97	128858.27	158560.07	54
7	63090.15	77586.29	81316.11	122976.87	128888.75	158503.34	53
8	63112.72	77567.94	81364.44	122903.81	128919.25	158446.67	52
9	63135.28	77549.58	81412.80	122830.81	128949.77	158390.05	51
10	63157.84	77531.21	81461.18	122757.86	128980.32	158333.48	50
11	63180.39	77512.83	81509.58	122684.96	129010.90	158276.97	49
12	63202.93	77494.45	81558.01	122612.11	129041.50	158220.51	48
13	63225.47	77476.06	81606.46	122539.32	129072.13	158164.11	47
14	63248.00	77457.67	81654.93	122466.58	129102.78	158107.76	46
15	63270.53	77439.27	81703.43	122393.89	129133.46	158051.46	45
16	63293.05	77420.86	81751.95	122321.25	129164.16	157995.21	44
17	63315.57	77402.44	81800.49	122248.66	129194.89	157939.02	43
18	63338.08	77384.02	81849.05	122176.13	129225.64	157882.89	42
19	63360.59	77365.59	81897.64	122103.64	129256.42	157826.80	41
20	63383.09	77347.16	81946.25	122031.21	129287.23	157770.77	40
21	63405.59	77328.72	81994.88	121958.83	129318.06	157714.79	39
22	63428.08	77310.27	82043.54	121886.50	129348.92	157658.87	38
23	63450.57	77291.82	82092.22	121814.22	129379.80	157603.00	37
24	63473.05	77273.36	82140.93	121741.99	129410.71	157547.18	36
25	63495.53	77254.89	82189.65	121669.82	129441.64	157491.41	35
26	63518.00	77236.42	82238.40	121597.69	129472.60	157435.70	34
27	63540.46	77217.94	82287.18	121525.62	129503.59	157380.04	33
28	63562.92	77199.45	82335.97	121453.59	129534.60	157324.43	32
29	63585.37	77180.96	82384.79	121381.62	129565.64	157268.87	31
30	63607.82	77162.46	82433.64	121309.70	129596.70	157213.37	30

TANGENTIVM & SECANTIVM.

39	Sinus		Tangens		Secans		
30	63607.82	77162.46	82433.64	121309.70	129596.70	157213.37	30
31	63630.26	77143.95	82482.51	121237.83	129627.79	157157.92	29
32	63652.70	77125.44	82531.40	121166.01	129658.90	157102.52	28
33	63675.13	77106.92	82580.31	121094.24	129690.04	157047.17	27
34	63697.56	77088.39	82629.25	121022.52	129721.21	156991.88	26
35	63719.98	77069.86	82678.21	120950.85	129752.40	156936.64	25
36	63742.40	77051.32	82727.19	120879.23	129783.62	156881.45	24
37	63764.81	77032.78	82776.20	120807.67	129814.87	156826.31	23
38	63787.21	77014.23	82825.23	120736.15	129846.14	156771.23	22
39	63809.61	76995.67	82874.29	120664.68	129877.44	156716.19	21
40	63832.01	76977.10	82923.37	120593.27	129908.76	156661.21	20
41	63854.40	76958.53	82972.47	120521.90	129940.11	156606.28	19
42	63876.78	76939.95	83021.60	120450.58	129971.48	156551.41	18
43	63899.16	76921.37	83070.75	120379.31	130002.88	156496.58	17
44	63921.53	76902.78	83119.92	120308.10	130034.31	156441.81	16
45	63943.90	76884.18	83169.12	120236.93	130065.76	156387.08	15
46	63966.26	76865.58	83218.34	120165.81	130097.24	156332.41	14
47	63988.62	76846.97	83267.59	120094.75	130128.75	156277.79	13
48	64010.97	76828.35	83316.86	120023.73	130160.28	156223.22	12
49	64033.32	76809.73	83366.15	119952.76	130191.84	156168.70	11
50	64055.66	76791.10	83415.47	119881.84	130223.43	156114.24	10
51	64077.99	76772.46	83464.81	119810.97	130255.04	156059.82	9
52	64100.32	76753.82	83514.18	119740.15	130286.68	156005.46	8
53	64122.64	76735.17	83563.57	119669.38	130318.34	155951.15	7
54	64144.96	76716.51	83612.98	119598.66	130350.03	155896.89	6
55	64167.27	76697.85	83662.42	119527.99	130381.75	155842.67	5
56	64189.58	76679.18	83711.88	119457.36	130413.49	155788.51	4
57	64211.88	76660.51	83761.36	119386.79	130445.26	155734.41	3
58	64234.18	76641.83	83810.87	119316.26	130477.06	155680.35	2
59	64256.47	76623.14	83860.40	119245.79	130508.88	155626.34	1
60	64278.76	76604.44	83909.96	119175.36	130540.73	155572.38	0

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C A N O N S I N V V M

40	Sinus		Tangens		Secans		
0	64278.76	76604.44	83909.96	119175.36	130540.73	155572.38	60
1	64301.04	76585.74	83959.54	119104.98	130572.61	155518.48	59
2	64323.32	76567.03	84009.15	119034.65	130604.51	155464.62	58
3	64345.59	76548.32	84058.78	118964.37	130636.44	155410.81	57
4	64367.85	76529.60	84108.44	118894.14	130668.39	155357.06	56
5	64390.11	76510.87	84158.12	118823.95	130700.37	155303.35	55
6	64412.36	76492.14	84207.82	118753.82	130732.38	155249.70	54
7	64434.61	76473.40	84257.55	118683.73	130764.42	155196.09	53
8	64456.85	76454.65	84307.30	118613.69	130796.49	155142.54	52
9	64479.09	76435.90	84357.08	118543.70	130828.58	155089.04	51
10	64501.32	76417.14	84406.88	118473.76	130860.70	155035.58	50
11	64523.55	76398.37	84456.70	118403.87	130892.84	154982.18	49
12	64545.77	76379.60	84506.55	118334.02	130925.01	154928.82	48
13	64567.98	76360.82	84556.43	118264.22	130957.21	154875.52	47
14	64590.19	76342.04	84606.33	118194.47	130989.43	154822.26	46
15	64612.40	76323.25	84656.25	118124.77	131021.68	154769.06	45
16	64634.60	76304.45	84706.20	118055.12	131053.96	154715.90	44
17	64656.79	76285.64	84756.17	117985.51	131086.26	154662.80	43
18	64678.98	76266.83	84806.17	117915.95	131118.59	154609.74	42
19	64701.16	76248.01	84856.19	117846.44	131150.95	154556.73	41
20	64723.34	76229.19	84906.24	117776.98	131183.34	154503.78	40
21	64745.51	76210.36	84956.31	117707.56	131215.75	154450.87	39
22	64767.67	76191.52	85006.40	117638.20	131248.19	154398.01	38
23	64789.83	76172.68	85056.52	117568.88	131280.66	154345.20	37
24	64811.99	76153.83	85106.67	117499.60	131313.16	154292.44	36
25	64834.14	76134.97	85156.84	117430.38	131345.68	154239.73	35
26	64856.28	76116.11	85207.04	117361.20	131378.23	154187.06	34
27	64878.42	76097.24	85257.26	117292.07	131410.81	154134.45	33
28	64900.55	76078.37	85307.50	117222.98	131443.41	154081.89	32
29	64922.68	76059.49	85357.77	117153.95	131476.04	154029.37	31
30	64944.80	76040.60	85408.07	117084.96	131508.70	153976.90	30

TANGENTIVM & SECANTIVM.

40	Sinus		Tangens		Secans		
30	64944.80	76040.60	85408.07	117084.96	131508.70	153976.90	30
31	64966.92	76021.70	85458.39	117016.01	131541.39	153924.49	29
32	64989.03	76002.80	85508.73	116947.12	131574.10	153872.12	28
33	65011.14	75983.89	85559.10	116878.27	131606.84	153819.80	27
34	65033.24	75964.98	85609.50	116809.47	131639.61	153767.52	26
35	65055.33	75946.06	85659.92	116740.71	131672.41	153715.30	25
36	65077.42	75927.13	85710.37	116672.00	131705.23	153663.12	24
37	65099.50	75908.20	85760.84	116603.34	131738.08	153611.00	23
38	65121.58	75889.26	85811.33	116534.72	131770.96	153558.92	22
39	65143.66	75870.31	85861.85	116466.15	131803.86	153506.89	21
40	65165.72	75851.36	85912.40	116397.63	131836.79	153454.91	20
41	65187.78	75832.40	85962.97	116329.16	131869.75	153402.97	19
42	65209.84	75813.43	86013.57	116260.73	131902.74	153351.09	18
43	65231.89	75794.46	86064.19	116192.34	131935.76	153299.25	17
44	65253.94	75775.48	86114.84	116124.00	131968.81	153247.46	16
45	65275.98	75756.50	86165.51	116055.71	132001.88	153195.72	15
46	65298.01	75737.51	86216.21	115987.47	132034.98	153144.03	14
47	65320.04	75718.51	86266.93	115919.27	132068.11	153092.38	13
48	65342.06	75699.50	86317.68	115851.11	132101.26	153040.78	12
49	65364.08	75680.49	86368.46	115783.01	132134.44	152989.23	11
50	65386.09	75661.47	86419.26	115714.95	132167.65	152937.73	10
51	65408.10	75642.45	86470.09	115646.93	132200.89	152886.27	9
52	65430.10	75623.42	86520.94	115578.96	132234.16	152834.87	8
53	65452.09	75604.39	86571.81	115511.04	132267.45	152783.51	7
54	65474.08	75585.35	86622.71	115443.16	132300.77	152732.19	6
55	65496.06	75566.30	86673.64	115375.32	132334.12	152680.93	5
56	65518.04	75547.24	86724.60	115307.54	132367.50	152629.71	4
57	65540.01	75528.18	86775.58	115239.79	132400.91	152578.54	3
58	65561.98	75509.11	86826.59	115172.10	132434.35	152527.41	2
59	65583.94	75490.04	86877.62	115104.45	132467.81	152476.34	1
60	65605.90	75470.96	86928.68	115036.84	132501.30	152425.31	0
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C A N O N S I N V V M

41	Sinus		Tangens		Secans		
0	65605.90	75470.96	86928.68	115036.84	132501.30	152425.31	60
1	65627.85	75451.87	86979.76	114969.28	132534.82	152374.33	59
2	65649.80	75432.78	87030.87	114901.76	132568.37	152323.39	58
3	65671.74	75413.68	87082.00	114834.29	132601.94	152272.50	57
4	65693.67	75394.57	87133.16	114766.87	132635.54	152221.66	56
5	65715.60	75375.46	87184.35	114699.49	132669.18	152170.87	55
6	65737.52	75356.34	87235.56	114632.15	132702.84	152120.12	54
7	65759.44	75337.21	87286.80	114564.86	132736.53	152069.42	53
8	65781.35	75318.08	87338.06	114497.62	132770.25	152018.76	52
9	65803.26	75298.94	87389.35	114430.41	132803.99	151968.15	51
10	65825.16	75279.80	87440.67	114363.26	132837.76	151917.59	50
11	65847.06	75260.65	87492.01	114296.15	132871.56	151867.08	49
12	65868.95	75241.49	87543.38	114229.08	132905.39	151816.61	48
13	65890.83	75222.33	87594.78	114162.06	132939.25	151766.19	47
14	65912.71	75203.16	87646.20	114095.08	132973.14	151715.81	46
15	65934.58	75183.98	87697.65	114028.15	133007.06	151665.48	45
16	65956.45	75164.80	87749.12	113961.26	133041.00	151615.20	44
17	65978.31	75145.61	87800.62	113894.41	133074.97	151564.96	43
18	66000.17	75126.41	87852.15	113827.61	133108.97	151514.77	42
19	66022.02	75107.21	87903.70	113760.85	133143.00	151464.62	41
20	66043.86	75088.00	87955.28	113694.14	133177.06	151414.52	40
21	66065.70	75068.79	88006.89	113627.47	133211.15	151364.47	39
22	66087.53	75049.57	88058.52	113560.85	133245.27	151314.46	38
23	66109.36	75030.34	88110.18	113494.27	133279.42	151264.50	37
24	66131.18	75011.11	88161.86	113427.73	133313.59	151214.59	36
25	66153.00	74991.87	88213.57	113361.24	133347.79	151164.72	35
26	66174.81	74972.62	88265.31	113294.79	133382.02	151114.89	34
27	66196.62	74953.37	88317.07	113228.39	133416.28	151065.11	33
28	66218.42	74934.11	88368.86	113162.03	133450.57	151015.38	32
29	66240.22	74914.84	88420.68	113095.71	133484.89	150965.69	31
30	66262.01	74895.57	88472.53	113029.44	133519.24	150916.05	30

TANGENTIVM & SECANTIVM.

41	Sinus		Tangens		Secans		
30	66262.01	74895.57	88472.53	113029.44	133519.24	150916.05	30
31	66283.79	74876.29	88524.40	112963.21	133553.62	150866.45	29
32	66305.57	74857.01	88576.30	112897.02	133588.03	150816.90	28
33	66327.34	74837.72	88628.22	112830.88	133622.46	150767.39	27
34	66349.11	74818.42	88680.17	112764.78	133656.92	150717.93	26
35	66370.87	74799.12	88732.15	112698.72	133691.41	150668.52	25
36	66392.62	74779.81	88784.16	112632.71	133725.94	150619.15	24
37	66414.37	74760.49	88836.20	112566.74	133760.49	150569.82	23
38	66436.11	74741.17	88888.26	112500.81	133795.07	150520.54	22
39	66457.85	74721.84	88940.34	112434.93	133829.68	150471.31	21
40	66479.59	74702.51	88992.45	112369.09	133864.32	150422.11	20
41	66501.32	74683.17	89044.59	112303.29	133898.99	150372.97	19
42	66523.04	74663.82	89096.75	112237.54	133933.69	150323.87	18
43	66544.75	74644.46	89148.94	112171.83	133968.42	150274.81	17
44	66566.46	74625.10	89201.16	112106.16	134003.17	150225.80	16
45	66588.17	74605.74	89253.41	112040.53	134037.95	150176.83	15
46	66609.87	74586.37	89305.69	111974.95	134072.76	150127.91	14
47	66631.56	74566.99	89357.99	111909.41	134107.61	150079.03	13
48	66653.25	74547.60	89410.32	111843.91	134142.48	150030.20	12
49	66674.93	74528.21	89462.68	111778.46	134177.38	149981.41	11
50	66696.61	74508.81	89515.06	111713.05	134212.32	149932.67	10
51	66718.28	74489.40	89567.47	111647.68	134247.28	149883.97	9
52	66739.94	74469.99	89619.91	111582.35	134282.27	149835.31	8
53	66761.60	74450.57	89672.38	111517.06	134317.29	149786.70	7
54	66783.26	74431.15	89724.87	111451.82	134352.34	149738.13	6
55	66804.91	74411.72	89777.39	111386.62	134387.42	149689.61	5
56	66826.55	74392.29	89829.94	111321.46	134422.53	149641.13	4
57	66848.18	74372.85	89882.52	111256.35	134457.67	149592.70	3
58	66869.81	74353.40	89935.12	111191.27	134492.84	149544.30	2
59	66891.44	74333.94	89987.75	111126.24	134528.04	149495.96	1
60	66913.06	74314.48	90040.41	111061.25	134563.27	149447.65	0

42	Sinus		Tangens		Secans		
0	66913.06	74314.48	90040.41	111061.25	134563.27	149447.65	60
1	66934.67	74295.01	90093.09	110996.30	134598.53	149399.40	59
2	66956.28	74275.54	90145.80	110931.40	134633.82	149351.18	58
3	66977.88	74256.06	90198.54	110866.53	134669.14	149303.01	57
4	66999.48	74236.57	90251.31	110801.71	134704.49	149254.88	56
5	67021.07	74217.08	90304.11	110736.93	134739.87	149206.80	55
6	67042.66	74197.58	90356.94	110672.19	134775.28	149158.75	54
7	67064.24	74178.08	90409.79	110607.50	134810.72	149110.76	53
8	67085.82	74158.57	90462.67	110542.84	134846.19	149062.80	52
9	67107.39	74139.05	90515.58	110478.23	134881.69	149014.89	51
10	67128.95	74119.53	90568.51	110413.65	134917.21	148967.03	50
11	67150.51	74100.00	90621.47	110349.12	134952.77	148919.20	49
12	67172.06	74080.46	90674.46	110284.63	134988.36	148871.42	48
13	67193.61	74060.92	90727.48	110220.19	135023.98	148823.69	47
14	67215.15	74041.37	90780.53	110155.78	135059.63	148775.99	46
15	67236.68	74021.81	90833.60	110091.41	135095.31	148728.34	45
16	67258.21	74002.25	90886.71	110027.09	135131.02	148680.73	44
17	67279.73	73982.68	90939.84	109962.81	135166.76	148633.17	43
18	67301.25	73963.11	90993.00	109898.56	135202.54	148585.65	42
19	67322.76	73943.53	91046.19	109834.36	135238.34	148538.17	41
20	67344.27	73923.94	91099.41	109770.20	135274.17	148490.73	40
21	67365.77	73904.35	91152.65	109706.08	135310.03	148443.34	39
22	67387.27	73884.75	91205.92	109642.01	135345.93	148395.99	38
23	67408.76	73865.15	91259.22	109577.97	135381.86	148348.68	37
24	67430.24	73845.54	91312.55	109513.97	135417.81	148301.42	36
25	67451.72	73825.92	91365.91	109450.02	135453.79	148254.20	35
26	67473.19	73806.29	91419.29	109386.10	135489.80	148207.02	34
27	67494.66	73786.66	91472.70	109322.23	135525.85	148159.88	33
28	67516.12	73767.02	91526.15	109258.40	135561.93	148112.78	32
29	67537.57	73747.38	91579.62	109194.60	135598.03	148065.73	31
30	67559.02	73727.73	91633.12	109130.85	135634.17	148018.72	30

TANGENTIVM & SECANTIVM.

42	Sinus		Tangens		Secans		
30	67559.02	73727.73	91633.12	109130.85	135634.17	148018.72	30
31	67580.46	73708.08	91686.65	109067.14	135670.34	147971.76	29
32	67601.90	73688.42	91740.20	109003.47	135706.54	147924.83	28
33	67623.33	73668.75	91793.79	108939.83	135742.77	147877.95	27
34	67644.76	73649.07	91847.40	108876.24	135779.03	147831.11	26
35	67666.18	73629.39	91901.04	108812.69	135815.32	147784.31	25
36	67687.60	73609.71	91954.71	108749.18	135851.64	147737.55	24
37	67709.01	73590.02	92008.41	108685.71	135888.00	147690.84	23
38	67730.41	73570.32	92062.14	108622.28	135924.38	147644.17	22
39	67751.81	73550.61	92115.90	108558.89	135960.80	147597.54	21
40	67773.20	73530.90	92169.68	108495.54	135997.25	147550.95	20
41	67794.59	73511.18	92223.50	108432.23	136033.72	147504.40	19
42	67815.97	73491.46	92277.34	108368.96	136070.23	147457.90	18
43	67837.34	73471.73	92331.22	108305.73	136106.77	147411.44	17
44	67858.71	73451.99	92385.12	108242.54	136143.34	147365.01	16
45	67880.07	73432.25	92439.05	108179.39	136179.95	147318.64	15
46	67901.43	73412.50	92493.01	108116.28	136216.58	147272.30	14
47	67922.78	73392.75	92547.00	108053.21	136253.24	147226.00	13
48	67944.13	73372.99	92601.01	107990.18	136289.94	147179.75	12
49	67965.47	73353.22	92655.06	107927.18	136326.67	147133.53	11
50	67986.81	73333.45	92709.14	107864.23	136363.43	147087.36	10
51	68008.14	73313.67	92763.24	107801.32	136400.22	147041.23	9
52	68029.46	73293.88	92817.38	107738.44	136437.04	146995.14	8
53	68050.78	73274.09	92871.54	107675.61	136473.89	146949.10	7
54	68072.09	73254.29	92925.73	107612.82	136510.78	146903.09	6
55	68093.39	73234.48	92979.96	107550.06	136546.70	146857.13	5
56	68114.69	73214.67	93034.21	107487.34	136584.64	146811.20	4
57	68135.99	73194.85	93088.49	107424.67	136621.62	146765.32	3
58	68157.28	73175.03	93142.80	107362.03	136658.63	146719.48	2
59	68178.56	73155.20	93197.14	107299.43	136695.67	146673.68	1
60	68199.84	73135.37	93251.51	107236.87	136732.75	146627.92	0

CANON SIN VVM

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TANGENTIVM & SECANTIVM.

43	Sinus		Tangens		Secans		
30	68835.45	72537.44	94896.46	105378.01	137859.85	145273.97	30
31	68856.55	72517.41	94951.76	105316.64	137897.92	145229.46	29
32	68877.64	72497.38	95007.09	105255.31	137936.02	145184.98	28
33	68898.73	72477.34	95062.45	105194.01	137974.16	145140.55	27
34	68919.81	72457.29	95117.84	105132.75	138012.33	145096.16	26
35	68940.89	72437.24	95173.26	105071.53	138050.53	145051.81	25
36	68961.96	72417.18	95228.71	105010.34	138088.77	145007.49	24
37	68983.02	72397.12	95284.20	104949.20	138127.04	144963.22	23
38	69004.07	72377.05	95339.71	104888.09	138165.34	144918.98	22
39	69025.12	72356.98	95395.26	104827.02	138203.67	144874.78	21
40	69046.17	72336.90	95450.83	104765.98	138242.04	144830.63	20
41	69067.21	72316.81	95506.44	104704.98	138280.44	144786.51	19
42	69088.24	72296.71	95562.08	104644.02	138318.87	144742.43	18
43	69109.27	72276.61	95617.74	104583.10	138357.34	144698.39	17
44	69130.29	72256.51	95673.44	104522.21	138395.84	144654.39	16
45	69151.31	72236.40	95729.17	104461.36	138434.37	144610.43	15
46	69172.32	72216.28	95784.94	104400.55	138472.94	144566.51	14
47	69193.32	72196.15	95840.73	104339.77	138511.54	144522.62	13
48	69214.32	72176.02	95896.55	104279.04	138550.17	144478.78	12
49	69235.31	72155.88	95952.41	104218.33	138588.83	144434.97	11
50	69256.30	72135.74	96008.29	104157.67	138627.53	144391.20	10
51	69277.28	72115.59	96064.21	104097.04	138666.26	144347.48	9
52	69298.25	72095.44	96120.16	104036.45	138705.03	144303.79	8
53	69319.22	72075.28	96176.14	103975.89	138743.83	144260.13	7
54	69340.18	72055.11	96232.15	103915.37	138782.66	144216.52	6
55	69361.14	72034.94	96288.19	103854.89	138821.53	144172.95	5
56	69382.09	72014.76	96344.27	103794.45	138860.42	144129.41	4
57	69403.04	71994.57	96400.37	103734.04	138899.36	144085.91	3
58	69423.98	71974.38	96456.51	103673.67	138938.32	144042.46	2
59	69444.91	71954.18	96512.68	103613.33	138977.32	143999.04	1
60	69465.84	71933.98	96568.88	103553.03	139016.36	143955.65	0

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CANON SINVVVM

44	Sinus		Tangens		Secans		
0	69465.84	71933.98	96568.88	103553.03	139016.36	143955.65	60
1	69486.76	71913.77	96625.11	103492.77	139055.43	143912.31	59
2	69507.67	71893.55	96681.37	103432.54	139094.53	143869.00	58
3	69528.58	71873.33	96737.67	103372.35	139133.66	143825.74	57
4	69549.49	71853.10	96794.00	103312.20	139172.83	143782.51	56
5	69570.39	71832.87	96850.35	103252.08	139212.03	143739.32	55
6	69591.28	71812.63	96906.74	103191.99	139251.27	143696.16	54
7	69612.17	71792.38	96963.16	103131.95	139290.54	143653.05	53
8	69633.05	71772.13	97019.62	103071.94	139329.85	143609.97	52
9	69653.92	71751.87	97076.10	103011.96	139369.18	143566.93	51
10	69674.79	71731.61	97132.62	102952.03	139408.56	143523.93	50
11	69695.65	71711.34	97189.17	102892.12	139447.96	143480.97	49
12	69716.51	71691.06	97245.75	102832.26	139487.40	143438.05	48
13	69737.36	71670.78	97302.36	102772.43	139526.88	143395.16	47
14	69758.21	71650.49	97359.01	102712.63	139566.39	143352.31	46
15	69779.05	71630.19	97415.69	102652.87	139605.93	143309.50	45
16	69799.88	71609.89	97472.40	102593.15	139645.51	143266.72	44
17	69820.71	71589.58	97529.14	102533.46	139685.12	143223.99	43
18	69841.53	71569.27	97585.91	102473.81	139724.77	143181.29	42
19	69862.34	71548.95	97642.72	102414.19	139764.45	143138.63	41
20	69883.15	71528.63	97699.56	102354.61	139804.16	143096.00	40
21	69903.96	71508.30	97756.43	102295.06	139843.91	143053.42	39
22	69924.76	71487.96	97813.33	102235.55	139883.69	143010.87	38
23	69945.55	71467.62	97870.27	102176.08	139923.51	142968.36	37
24	69966.33	71447.27	97927.24	102116.64	139963.36	142925.88	36
25	69987.11	71426.91	97984.24	102057.23	140003.25	142883.44	35
26	70007.89	71406.55	98041.27	101997.86	140043.17	142841.04	34
27	70028.66	71386.18	98098.33	101938.53	140083.13	142798.68	33
28	70049.42	71365.81	98155.43	101879.23	140123.12	142756.36	32
29	70070.18	71345.43	98212.56	101819.97	140163.15	142714.07	31
30	70090.93	71325.05	98269.73	101760.74	140203.21	142671.82	30

TANGENTIVM & SECANTIVM.

44	Sinus		Tangens		Secans		
30	70090.93	71325.05	98269.73	101760.74	140203.21	142671.82	30
31	70111.67	71304.66	98326.92	101701.55	140243.30	142629.61	29
32	70132.41	71284.26	98384.15	101642.39	140283.43	142587.43	28
33	70153.14	71263.85	98441.41	101583.26	140323.60	142545.29	27
34	70173.87	71243.44	98498.71	101524.17	140363.80	142503.19	26
35	70194.59	71223.02	98556.03	101465.12	140404.03	142461.12	25
36	70215.30	71202.60	98613.39	101406.10	140444.30	142419.09	24
37	70236.01	71182.17	98670.79	101347.12	140484.60	142377.10	23
38	70256.71	71161.74	98728.21	101288.17	140524.94	142335.14	22
39	70277.41	71141.30	98785.67	101229.25	140565.32	142293.23	21
40	70298.10	71120.86	98843.16	101170.37	140605.73	142251.34	20
41	70318.79	71100.41	98900.69	101111.53	140646.17	142209.50	19
42	70339.47	71079.95	98958.25	101052.72	140686.65	142167.69	18
43	70360.14	71059.48	99015.84	100993.94	140727.17	142125.92	17
44	70380.81	71039.01	99073.46	100935.20	140767.72	142084.18	16
45	70401.47	71018.54	99131.12	100876.49	140808.31	142042.48	15
46	70422.13	70998.06	99188.81	100817.82	140848.93	142000.82	14
47	70442.78	70977.57	99246.54	100759.18	140889.58	141959.19	13
48	70463.42	70957.07	99304.29	100700.58	140930.28	141917.61	12
49	70484.06	70936.57	99362.08	100642.01	140971.00	141876.05	11
50	70504.69	70916.07	99419.91	100583.47	141011.77	141834.54	10
51	70525.32	70895.56	99477.77	100524.97	141052.56	141793.05	9
52	70545.94	70875.04	99535.66	100466.51	141093.40	141751.61	8
53	70566.55	70854.51	99593.58	100408.07	141134.27	141710.20	7
54	70587.16	70833.98	99651.54	100349.68	141175.17	141668.83	6
55	70607.76	70813.45	99709.53	100291.31	141216.11	141627.49	5
56	70628.35	70792.91	99767.56	100232.98	141257.09	141586.19	4
57	70648.94	70772.36	99825.62	100174.69	141298.10	141544.93	3
58	70669.53	70751.80	99883.71	100116.42	141339.15	141503.70	2
59	70690.11	70731.24	99941.84	100058.19	141380.24	141462.51	1
60	70710.68	70710.68	100000.00	100000.00	141421.36	141421.36	0

G E O M E T R I Æ

T R I A N G V L O R V M

L I B E R I I I.

De Rectilineorum Triangulorum Calculo.

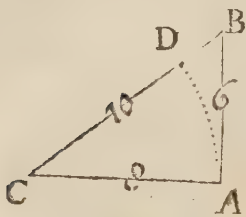
I.



C A N O N Triangulorum compositus, faciem rectilineorum, Sphæricorumque Triangulorum Calculum suppeditat.

Hæc est tertia pars Triangulorum Geometriæ : Canonis Triangulorum compositi usum ostendens, eumque duplicem. Priorem in rectilineorum Triangulorum : Alterum in Sphæricorum Triangulorum Calculo.

2. Triangulum rectilineum, est figura in planicie, tribus rectis lineis, quæ finibus suis se mutuo contingunt, conformata.



Talis est figura A B C : est enim conformata in planicie, tribus rectis lineis A B, A C & B C, quæ finibus suis se mutuo contingunt.

3. Triangulum rectilineum, rectangulum est, aut obliquangulum.

4. Triangulum rectilineum rectangulum est, quod angulum habet rectum.

Tale est in figura superiori Triangulum A B C : habet enim angulum rectum ad A.

5. Anguli rectilinei amplitudinem determinat comprehensus ab eo arcus, qui super vertice anguli ipsius velut centro describitur.

Sic in figura præmissa arcus A D, descriptus centro C, mensurat amplitudinem anguli B C A.

6. In

6. In Triangulo rectangulo quadratum basis est æquale quadratis laterum.

Basis Trianguli rectanguli vocatur recta linea quæ angulum rectum subtendit: reliquæ verò rectum ambientes, latera dicuntur. Itaque in Triangulo superiori ABC, quadratum basis BC, est æquale quadratis laterum BA & CA: cujus ratio ex penultima primi element. manifesta est.

ΠΟΡΙΣΜΑΤΑ duo.

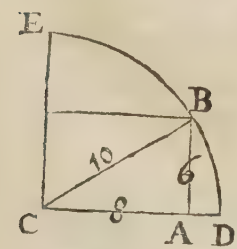
Itaque lateribus trianguli rectanguli cognitis, invenitur & basis: collecta enim in unam summam laterum quadrata, componunt quadratum basis, cujus radix quadrata est ipsa basis quæsitæ.

In exemplo sit latus AB 6; & quadratum ejus 36: AC 8, & quadratum 64; erit BC 10. Iuncta enim simul quadrata 36 & 64, componunt quadratum 100: cujus radix quadrata est 10, pro BC basi quæsitæ.

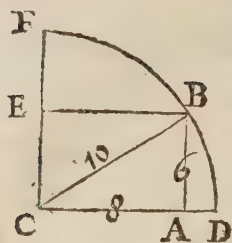
Data vero basi cum latere alterutro, manifestatur & reliquum latus: subducto enim quadrato lateris dati, ex quadrato basis, relinquitur quadratum reliqui lateris; cujus radix quadrata est mensura lateris quæsitæ.

In exemplo præmisso, deme quadratum lateris AC 64, ex quadrato basis BC 100: relinquitur quadratum lateris AB 36; & radix ejus 6, pro ipso latere, ut supra. Item deme quadratum lateris AB 36, ex quadrato basis BC 100: residuum erit quadratum lateris AC 64; & radix quadrata ejus 8, pro ipso latere postulato.

7. Si Trianguli rectanguli basis assumatur ut circuli radius, latera sinus recti sunt oppositorum angulorum.



Est enim Triangulum rectangulum ABC, in quo BC basis assumatur ut circuli radius. Dico BA esse sinum rectum anguli BCA; & AC sinum rectum anguli ABC. Recta enim BA est perpendicularis à termino arcus B in semidiametrum DAC. Itaque per 7 primi hujus, Sinus rectus est arcus DB vel anguli BCA per 5 hujus. Eadem ratione recta BE, est sinus rectus arcus FB, vel anguli



guli BCE. Atqui per 34 primi, AC æquatur BE;
 & angulus ABC, æquatur angulo BCE: ergo
 AC, sinus est anguli ABC oppositi.

ΠΟΡΙΣΜΑΤΑ quatuor.

Primo itaque data basi cum angulis inveniuntur latera. Nam ut radius se habet ad sinum anguli; ita basis ad latus ipsi angulo oppositum.

Exempli gratia, Sit basis BC partium 10, & angulus BCA partium 36 52' 11'', & ABC prioris complementi partium 53 7' 49'', Sinus autem AB 6000000, & AC 8000000, in ea mensura, in qua radius BC est 10000000. Invenientur latera AB 6, & AC 8. Nam per 19 Septimi Euclidis,

Vt BC 10000000, ad AB 6000000: Ita BC 10, ad AB 6. Item
 Vt BC 10000000, ad AC 8000000: Ita BC 10, ad AC 8.

Secundo, data basi cum latere alterutro, manifestantur anguli. Basis enim est ad latus datum: ut radius ad sinum anguli dicto lateri oppositi.

In eodem exemplo, detur BC 10, & AB 6: Invenietur angulus ACB partium 36 52' 11''. Nam per 19 Septimi Euclidis,

Vt BC 10, ad AB 6: Ita BC 10000000, ad AB 6000000, sinum partium 36 52' 11'', competentem angulo ACB. Itaque ABC reliquus angulus, est partium 53 7' 49'': prioris scilicet complementum, ut ex 7 hujus, & 32 primi elementorum manifestum est.

Tertio, dato latere alterutro, cum angulis, investigatur latus reliquum. Sinus enim anguli dato lateri oppositi, est ad sinum complementi sui: ut latus datum, ad latus reliquum.

Detur in eodem exemplo angulus ACB partium 36 52' 11'', & sinus ejus 6000000: ABC partium 53 7' 49'', & sinus ejus 8000000, cum latere AB 6; Dabitur AC reliquum latus 8. Nam per 19 Septimi Euclidis,

Vt AB 6000000, ad AC 8000000: Ita AB 6, ad AC 8.

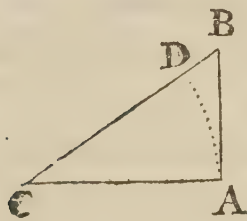
Quarto, datis angulis, & latere alterutro, addiscitur basis:
 Sinus

Sinus enim anguli dato lateri oppositi, est ad radium : ut latus datum ad Basin.

Repetito & hic superiori exemplo, Detur AB 6, & angulus ei oppositus BCA partium 36 52' 11'', cum sinu ejus 6000000. Invenietur basis BC partium 10. Nam per 19 Septimi Euclidis, Ut AB 6000000, ad BC 10000000: Ita AB 6, ad BC 10.

8. Si Trianguli rectanguli latus alterutrum, ex acuto angulo, fiat circuli radius; reliquum est ejusdem anguli Tangens.

Esto rectangulum Triangulum ABC, cujus latus AC fiat circuli radius ex acuto angulo C. Dico AB, tangentem esse anguli ACB, vel arcus AD: est enim perpendicularis extremo semidiametri A, in radium CD per arcus terminum D continuatum. Itaque per 14 Primi hujus, dicti anguli, vel arcus, Tangens est.



ΠΟΡΙΣΜΑΤΑ duo.

Primo igitur, dato latere alterutro cum angulis, invenitur reliquum latus. Radius enim est ad tangentem anguli lateri quæsito oppositi : ut latus datum ad latus reliquum.

Exempli gratia detur latus AB 6: & angulus ABC part. 53 7' 49'', fiatque AB radius: erit AC Tangens anguli ABC ex Canone Tangentium 13333333 paulo plus; & latus AC reliquum 8. Nam per 19 Septimi Euclidis,

Ut AB 10000000, ad AC 13333333 paulo plus: Ita AB 6, ad AC 8, Omnino ut supra.

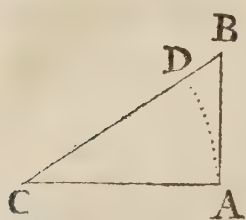
Secundo, dato utroque latere, investigantur anguli. Nam ut latus alterum est ad latus reliquum; ita radius ad tangentem anguli reliquo lateri oppositi.

In exemplo detur latus AB 6: & reliquum latus AC 8. Invenietur angulus ABC lateri AC oppositi, partium 53 7' 49''. Nam per 19 Septimi Euclidis,

Ut AB 6, ad AC 8: Ita AB 10000000, ad AC 13333333 paulo plus, Tangentem anguli ACB, oppositi lateri AC; qui ex Tangentium Canone invenitur partium 53 7' 49''. Ergo reliquus angulus BCA est partium 36 52' 11''.

9. Si Tri-

9. Si Trianguli rectanguli latus alterutrum est anguli tangens, basis est anguli ejusdem secans.



Repetita præmissi Theorematis figura, Sit AB latus, Tangens anguli BCA. Dico Basim BDC esse ejusdem anguli Secantem: est enim ducta per terminum peripheriæ AD in Tangentem AB. Itaque per 19 primi hujus, Secans est peripheriæ AD, vel anguli BCA.

ΠΟΡΙΣΜΑΤΑ tria.

Primo ergo, dato latere alterutro, cum angulis, manifestatur basis. Radius enim est ad secantem anguli dati: ut latus eidem angulo adjacens ad Basin.

Exempli loco detur latus AC 8; & angulus BCA Dato lateri adjacens, partium 36 52' 11": secans ejus 12500000, erit Basis BC 10. Nam per 19 Septimi Euclidis,

Vt AC 10000000, ad BC 12500000: Ita AC 8, ad BC 10.

Secundo, dato latere alterutro & Basi, exquiruntur anguli. Nam ut latus alterutrum ad Basim: ita radius est ad secantem anguli lateri dato adjacentis.

In exemplo eodem, detur latus AC 8, & basis BC 10: erit angulus BCA partium 36 52' 11". Nam per 19 Septimi Euclidis,

Vt AC 8, ad BC 10: Ita AC 10000000, ad BC 12500000, Secantem anguli BCA, lateri dato AC adjacentis. Inveniturque ex Canone secantium partium 36 52' 11": ergo reliquus ABC, est partium 53 7' 49".

Tertio datis angulis & Basi, inveniuntur latera. Nam secans anguli dati est ad radiū: ut basis ad latus dato angulo adjacens.

Sit iterum exempli loco angulus BCA partium 36 52' 11", & Secans ejus è Canone Secantium 12500000: Basis BC 10; erit AC latus angulo dato adjacens 8. Nam per 19 Septimi Euclidis,

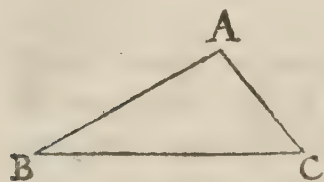
Vt BC 12500000, ad AC 10000000: Ita BC 10, ad AC 8

Rursus detur Secans anguli ABC partium 53. 7'. 49". 16666666: & basis BC 10; erit AB 6. Nam per 19 Septimi Euclidis,

Vt BC 16666666, ad AB 10000000: Ita BC 10, ad AB 6.

Et sic Triangulorum Rectangulorum Calculum absolvimus. Sequitur

10. Triangulum rectilineum obliquangulum est, cujus tres anguli obliqui sunt.

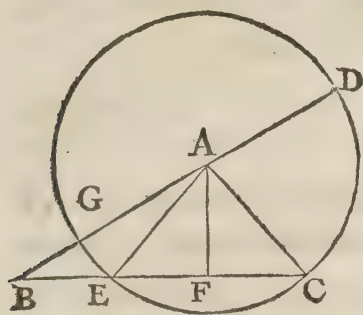


II. Obliquus angulus est qui acutus
est aut obtusus.

12. Acutus angulus est qui recto minor est: obtusus qui recto major.

Ita in superiori figura angulus ad B & C est acutus, est enim uterque recto minor: angulus verò ad A obtusus est, quia recto major est.

13. Si trianguli obliquanguli latus minus fiat circuli radius, & ex ejus angulari puncto describatur circulus, basin & latus majus secans; erit basis ad summam laterum, ut segmentum lateris ad segmentum basis.

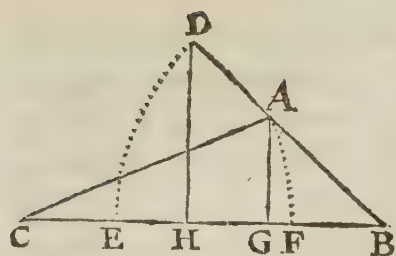


Basis trianguli obliquanguli vocatur latus majus : vel, si æquicrurum sit, alterutrum crurum pro basi assumptum. Sit ergo ABC Triangulum obliquangulum, cujus latus minus AC, basis BC : facto autem AC radio, ex A puncto angulari, describatur circuli peripheria, secans basin in E, reliquum latus in G. Dico basin BC, esse ad summam laterum BA &

AC vel AD (AC enim & AD radii sunt, & proinde æquales per
15 Definitionem primi elementorum) ut BG lateris segmentum, ad BE
segmentum Basis. Rectæ enim BD & BC à B puncto extra circulum
productæ secant circulum in G & E. Itaque per 36 Tertiæ elementorum,
ut BC ad BD: Ita BG ad BE. quod erat demonstrandum.

Π Ο Ρ Ι Σ Μ Α.

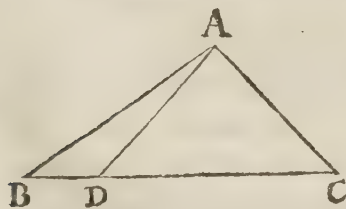
Itaque tribus obliquanguli Trianguli lateribus datis, inveniuntur tres anguli. Nam ut basis trianguli ad summam laterum, ita laterum differentia ad basis segmentum: sed ut basis segmentum cum semisse residui, est ad latus majus; ita radius ad se-



tinuetur enim BA latus in D, ut æquale sit lateri AC: descriptisque peripheriis DE & AF æqualibus radiis CA & BD, dimittantur ex D & A arcuum terminis perpendiculares in basim BC; sintque DH & AG sinus recti scilicet angulorum C & B, vel arcuum AF & DH per 7 primi huius. Erit per 4 sexti elementorum, ut BA ad BD, hoc est AC: Ita AG sinus rectus anguli oppositi, ad DH sinum rectum anguli oppositi: quod erat demonstrandum. Conversa huius Theorematis eodem modo demonstratur. Nam quia BA latus unum est ad BD latus alterum: ut AG sinus angulo C oppositi, ad DH sinum anguli oppositi; est etiam, per elementum citatum, AG sinus anguli C, ad DH sinum anguli B; ut oppositum latus AB, ad oppositum latus DH, id est, BC. Quod etiam demonstrandum erat. Observa autem hoc Theorema verum esse non modo in omnibus rectilineis Triangulis, sed & Sphæricis, quemadmodum suo loco demonstrabitur.

ΠΟΡΙΣΜΑΤΑ duo.

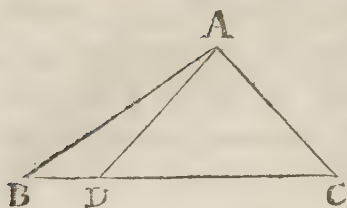
Itaque datis duobus obliquanguli Trianguli lateribus, & angulo non ab iis comprehenso obtuso (aut si acuto data anguli specie alteri lateri oppositi) anguli reliqui, & latus tertium invenitur. Nam ut latus alterutrum dato angulo oppositum est ad sinum anguli dati: ita latus alterum, ad sinum anguli oppositi. Dantur ergo duo anguli; quibus ex semicirculo ablati, relinquitur tertius. quare ut sinus anguli alterutrius noti, ad alterutrum latus oppositum; ita sinus anguli tertii, ad latus tertium.



Detur in Triangulo ABC obliquangulo, latus AB 25; AC 17: & angulus ABC non ab iis comprehensus acutus partium 36 52' 11"; cum acuta specie anguli ad C ignoti. Invenietur ipse angulus ad C partium 61 55' 39". Nam per 19 Septimi Euclidis,

Vt latus AC 17, ad sinum anguli ABC 6000000: Ita AB latus 25, ad sinum anguli ACB 8823529.

Cujus arcus è sinuum Canone datur partium 61 55' 39", quia species anguli acuta est: nam si obtusa esset, angulus existeret partium 118 4' 21". Quod ut manifestum fiat, ducatur ex A recta AD in basim BC, æqualis AC:



lis AC: erit ADC Triangulum æquicrurum, & angulus ADC per 5 primi element. æqualis angulo ACD; exterior autem ADB per 13 ejusdem, erit reliquus ad semicirculum. Quare ut latus BA subtendit duplicem angulum, ADB obtusum, & ACB acutum: Ita etiam sinus inventus, per 7 primi hujus est duarum peripheriarum, minoris circuli quadrante, & reliquæ ad semiperipheriam. Patet igitur definiendam esse anguli speciem dato angulo acuto existente. Alia vero est ratio, cum angulus obtusus datur: nam tum manifestum est, reliquos Trianguli angulos acutos esse. Duo enim obtusi anguli in Triangulo plano esse nequeunt, cum omnes Trianguli anguli per 32 primi element. æquales sint duobus rectis. Itaque species anguli tunc per se data est, nempe acuta.

Porro cum in Triangulo ABC duo anguli noti sint, ABC & ACB, non potest latere tertius BAC: est enim per 32 primi elementorum, residuus duorum datorum ad semicirculum, partium scilicet 81 12' 10". Itaque tertium latus inde innotescit. Nam

Vt sinus anguli ABC 6000000, ad latus AC 17: Ita sinus anguli BAC 9882353, ad latus BC 28. vel,

Vt sinus anguli ACB 8823529, ad latus AB 25: Ita sinus anguli BAC 9882353, ad latus BC 28.

Secundo, datis duobus Trianguli obliquanguli angulis, & uno latere, manifestatur angulus tertius, cum reliquis lateribus. Subductis enim duobus angulis datis ex semicirculo, relinquitur tertius. quare ut se habet sinus anguli lateri dato oppositi ad latus datum: ita etiam reliquorum angulorum sinus ad latera opposita.

Sit & hic Triangulum obliquangulum ABC, cujus duo anguli ABC 36 52' 11": & ACB 61 55 39 dentur; cum latere BC 28. Invenietur reliquus angulus BAC, cum lateribus BA & AC. Demptis enim angulis datis ex semicirculo, relinquitur angulus tertius BAC, partium 81 12' 10". Itaque per 19 septimi Euclidis,

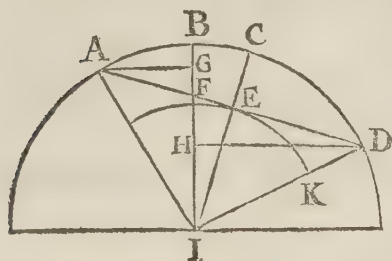
Vt sinus anguli BAC 9882352, ad latus BC 28: Ita sinus anguli ABC 6000000, ad latus AC 17. Item

Vt sinus anguli BAC 9882352, ad latus BC 28: Ita sinus anguli ACB 8823529, ad latus AB 25. vel.

Vt

Vt sinus anguli ABC 6000000, ad latus AC 17 : Ita sinus anguli ACB 8823529, ad latus AB 25.

15. Si angulorum duorum summa detur, quorum sinuum ratio inter se constet, ipsi etiam anguli secernuntur. Nam ut semissis summæ sinuum rationis, ad differentiam semissis, & termini rationis sinuum alterutrius est: ita tangens summæ angulorum, ad tangentem anguli; quo minor quæsitus ab angulorum summæ semisse deficit; major eam superat.



Detur in adjecto diagrammate, summa angulorum AIB & BID part. 40: cum ratione sinuum ut AG ad DH (vel per 4 sexti elementorum ut AF ad DF) ut 4 ad 7. Dico utrumque angulum AIB & BID sigillatim datum iri. Egrediatur enim ex I recta, bifecans AD, rationis sinuum summam datam

in E: erit AE $5\frac{1}{2}$, & angulus AIE partium 20, æqualis angulo DIE; FE vero (differentia termini minoris AF 4, & AE $5\frac{1}{2}$ vel ED $5\frac{1}{2}$ & FD termini majoris 7) $1\frac{1}{2}$. Fiat quoque IE radius, ut DE tangens sit anguli DIE, vel arcus KE partium 20: hinc enim dabitur tangens EF angulum EIF vel BIC subtendens. Nam per 19 septimi Euclidis

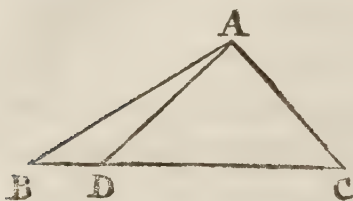
Vt DE $5\frac{1}{2}$, ad DE tangentem ang. DIE 3639702: Ita FE $1\frac{1}{2}$, ad FE tang. anguli EIF, 992646

Cujus arcus è Tangentium Canone datur partium 5 40' 8" fere. Atqui hoc angulo major est angulus BID major: minor vero angulus AIB minor. Ergo BID angulus est partium 25 40' 8" fere: AIB partium 14 19' 52": Quod erat demonstrandum.

ΠΟΡΙΣΜΑ.

Itaque duobus obliquanguli Trianguli lateribus datis, & angulo ab iis comprehenso, inveniuntur anguli reliqui, & latus tertium. Nam ut semissis summæ laterum datorum, ad differentiam summæ semissis, & lateris alterutrius: Sic tangens semissis residui anguli ad semicirculum, ad Tangentem anguli, quo angulus minori lateri oppositus eadem semisse minor, ma-

jori major est. Dantur ergo tres anguli. Quare, ut sinus alterutrius anguli, ad latus oppositum: ita sinus anguli quæsito oppositi, ad latus quæsitum.



Retenta superioris Trianguli figura, sit latus AB 25; BC 28: & angulus ABC partium 36 52' 11". Invenientur reliqui anguli BAC , & ACB cum tertio latere AC . Nam per 32 primi elementorum, ex angulo B noto, datur summa angulorum BAC & ACB , partium 143 7' 48", residuum scilicet anguli dati ad semicirculum: item ex lateribus notis, datur ratio sinuum angulorum oppositorum per 13 hujus. Itaque cum angulorum duorum summa detur, cum ratione sinuum etiam uterque sigillatim definitur. Nam

Vt semissis summae laterum 26 $\frac{1}{2}$. } ad differentiam summae semissis & lateris alterutrius 1 $\frac{1}{2}$:

Sic Tangens semissis residui anguli, ad semicirculum partium 71 33' 54", scilicet 30000000 } ad Tangentem 1698112, anguli partium 9 38' 15", quo angulus ACB minori lateri oppositus semisse residui anguli ad semicirculum minor est: reliquus BAC majori lateri oppositus major est. Itaque ACB est part. 61 55' 39", BAC 81 11' 9". ut supra.

Latus AC ex præmissis Theoremate invenitur 17. Nam

Vt sinus anguli BAC 9882352 ad BC oppositum latus 28: Ita sinus anguli ABC 6000000, ad AC latus oppositum 17.

Et sic calculum rectilineorum Triangulorum exposuimus, cujus usus est in omni magnitudinum genere dimetiendo. Superest tantum ut in eo Mathematicum studiosus sedulo se exerceat. Theoremata enim sunt pro inventione cujusvis quarti in Triangulo rectilineo datis tribus, idque per 19 septimi Euclidis, .i. regulam proportionum.

Etsi vero superior doctrina tam clare proposita sit, ut ulterius explicari non sit opus: quo tamen promptior & expeditior sit ejus usus, subjungimus sequentem diatyposin, in qua tanquam in tabula doctrinae superioris summam exhibemus.

B A S I S

Ex utroque latere, per 6 hujus.

Adde in unam summam quadrata laterum, componitur quadratum Basis: cuius radix quadrata ipsam Basim manifestat.

Ex angulis & alterutro latere, per 7 hujus.

^I
Vt sinus anguli dato } ^{II}
lateri oppositi } ad radium { ^{III} Ita datum latus, ^{IIII} ad basim.

vel per 9 hujus,

^I } ^{II} } ^{III} } ^{IIII}
Vt radius } ad secantem anguli dato } Ita datum latus, ad basim.
lateri adjacentis

A N G V L I

Ex basi & latere alterutro, per 7 hujus.

^I } ^{II} } ^{III} } ^{IIII}
Vt basis } ad latus datum } Ita radius } ad sinum anguli dato
lateri oppositi.

vel per 9 hujus,

^I } ^{II} } ^{III} } ^{IIII}
Vt latus datum } ad basin } Ita radius } ad secantem anguli dato
lateri adjacentis.

Ex utroque crure, per 8 hujus.

^I } ^{II} } ^{III} } ^{IIII}
Vt latus } ad latus reli- } Ita radius } ad Tangentem anguli reliquo
quum } lateri oppositi.

IN TRIANGULO OBLIQUANGULO

inveniuntur

ANGULI

Ex tribus lateribus, per 13 hujus.

^I <i>Vt basis Trianguli</i>	}	^{II} <i>ad summam laterum</i>	{	^{III} <i>Ita laterum dif- ferentia</i>	}	^{IIII} <i>ad basis seg- mentum.</i>
^I <i>Vt Basis segmentum cum semisse residui</i>	}	^{II} <i>ad latus majus</i>	{	^{III} <i>Ita radius</i>	}	^{IIII} <i>ad secantem anguli lateri majori adjacentis.</i>
^I <i>Vt semissis re- sidui</i>	}	^{II} <i>ad latus mi- nus</i>	{	^{III} <i>Ita radius</i>	}	^{IIII} <i>ad secantem anguli lateri minori adjacentis.</i>

Dantur jam duo anguli : Tertius est horum duorum residuus ad semicirculū.

LATVS ET ANGVLIVDO.

Ex duobus lateribus datis, & uno angulo obtuso non ab iis
comprehenso : vel si acuto data specie alterutrius
anguli ignoti, per 14 hujus.

^I <i>Vt latus datum dato angulo oppositum</i>	}	^{II} <i>ad sinum anguli dati</i>	{	^{III} <i>Ita latus al- terum</i>	}	^{IIII} <i>ad sinum ang. oppositi minoris quadrante, si species anguli acuta sit, majoris si obtusa.</i>
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Dantur jam duo anguli: Tertius est horum duorum residuus ad semicirculum.

^I <i>Vt sinus anguli al- terutrius noti</i>	}	^{II} <i>ad latus op- positum</i>	{	^{III} <i>Ita sinus an- guli terti</i>	}	^{IIII} <i>ad latus tertium.</i>
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ANGVLVS ET DVO LATERA,

Ex duobus angulis & uno latere, per eandem.

Tertius angulus est reliquus duorum datorum ad semicirculum. Itaque,

*Ut sinus anguli dato la-^I } ad latus datum^{II} { Ita sinus anguli^{III} } ad latus op-
teri oppositi } secundi } positum.*

*Ut sinus anguli } ad suum latus op- { Ita sinus anguli } ad latus tertium.
alterutrius } positum } tertii }*

ANGVLI DVO ET LATVS

Ex duobus lateribus & angulo ab iis com-
prehenso, per 15 hujus.

*Ut semissis summæ laterum^I } ad differentiam summæ semissis & lateris alter-
atæ } utrius :^{II}*

*Ita Tangens semissis^{III} } ad Tangentem anguli, quo angulus lateri minori opposi-
residui anguli ad } tus semisse dicti residui anguli ad semicirculum mi-
semicirculum } nor est : oppositus majori major est.*

*Ut anguli alteru-^I } ad latus op- { Ita sinus anguli quæsito^{III} } ad latus quæ-
trius sinus } positum } lateri oppositi } situm.^{IIII}*

G E O M E T R I Æ

T R I A N G V L O R V M

L I B E R I I I I.

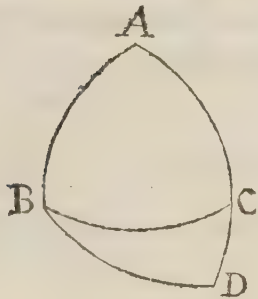
De Calculo Triangulorum Sphæricorum.

I.



ANONIS Triangulorum compositi usus alter est, in Calculo Triangulorum Sphæricorum.

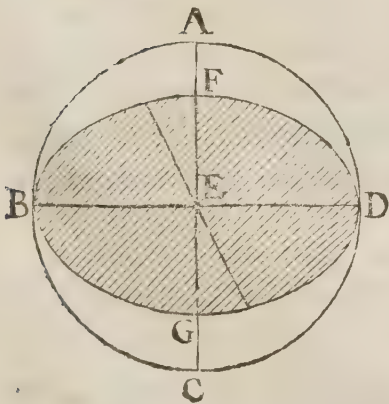
Superioris libri Theoremate primo, duplex nobis usus Triangulorum Canonis indicatus est: prior in rectilineorum, posterior in Sphæricorum Triangulorum Calculo. Prioris vero ratio præmisso tractatu nobis fuse explicata est: Posterioris demonstratio hoc libro continetur.



2. Triangulum Sphæricum, est figura in sphærica superficie, trium maximorum Sphæ-
ræ arcuum concursu, conformata.

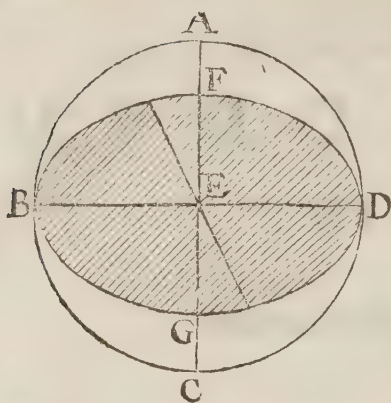
Talis est in adjecto schemate, figura ABC, vel ABD.

3. Maximi Sphæ-
ræ circuli sunt quibus u-
num Sphæ-
ræ centrum commune est.



4. Si maximus Sphæ-
ræ circulus
transeat per maximi polos, ipsi nor-
malis est: & contra.

*Maximus circulus. ABCD, transeat per maximi circuli BGDF polos A & D: dico circulum ABCD, normalem esse circulo BGDF. Ducatur enim per centrum Sphæ-
ræ E, recta BED, ad communem intersec-
tionem planorum B & D: secetque eam alia re-
cta AEC normaliter per centrum E, & po-*



per quos necessario transit circulus $ABCD$, per conversam decima octavæ undecimi elementorum. Itaque maximus Sphæræ circulus $ABCD$, maximo $BGDF$ normalis, transit per polos ejus : quod erat demonstrandum.

ΠΟΡΙΣΜΑΤΑ duo.

Itaque demissus à polo circuli maximi, in circumferentiam suam arcus, dictæ circumferentiæ normalis est.

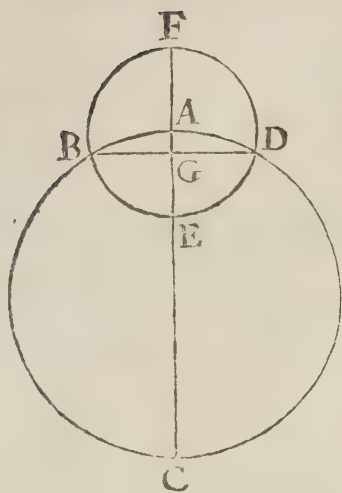
Sit enim in figura superiori AB arcus maximi circulus, demissus in circumferentiam $BGDF$ à polo ejusdem A : erit eidem normalis. Nam cum arcus AB , transeat A polum circuli $BGDF$, vel saltem in eo desinat, consequitur eidem normalem esse.

Punctum vero concursus duorum arcuum maximi circuli, vel unius quadrantis terminus, normaliter è circulo maximo eductorum, est ejusdem circuli polus.

Sic in eodem diagrammate, A punctum concursus duorum arcuum BA & DA , eductorum normaliter è circulo maximo $BGDF$: vel A , terminus quadrantis BA vel DA ex eodem circulo normaliter educti, est ejusdem circuli polus. Nam cum BA & DA sigillatim circulo $BGDF$ normales sint ex thesi, necesse per polos transeunt, vel in polo concurrunt : & proinde punctum concursus arcuum BA & DA , vel terminus quadrantis alterutrius, est circuli $BGDF$ polus.

5. Si maximus Sphæræ circulus, transeat per minoris circuli polum, eidem normalis est.

Maximus Sphæræ circulus $ABCD$, transeat per A polum circuli minoris $BEDE$: dico maximum minori normalem esse. Maximi e-



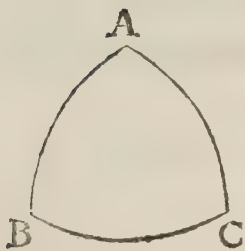
nim circuli diameter AEC, est normalis diametro minoris BGD per 3 tertii elementorum. Itaque & circulus maximus ABCD, minimo BEDF normalis per 18 undecimi Euclidis: quod erat demonstrandum.

6. Triangulum Sphæricum, rectangulum est, aut obliquangulum.

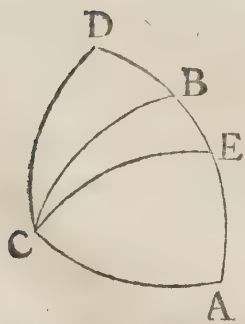
7. Rectangulum est quod angulum habet rectum.

8. Anguli amplitudinem in Sphærico Triangulo, mensurat arcus maximi circuli, ex angulo tanquam polo descriptus dictum angulū subtendens.

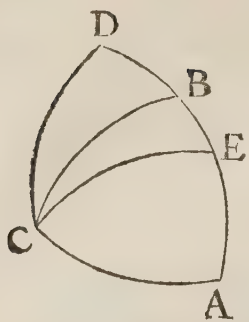
Ita in adjuncta Diagrapha, arcus BC, mensurat angulum BAC: est enim arcus magni circuli, ex angulo A, tanquam polo descriptus, ipsum angulum subtendens.



9. Si Trianguli rectanguli latus alterum, sit quadrans circuli, oppositus angulus rectus est; si quadrante majus, obtusus; si minus, acutus; & contra.



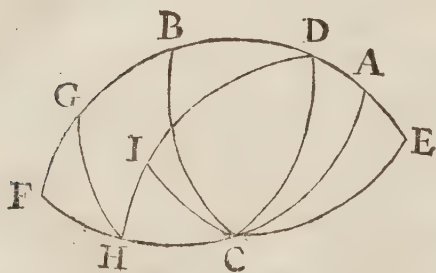
Latus rectanguli Trianguli alterum, vocamus arcum alterutrum qui rectum angulum continent. Est igitur Triangulum Sphæricum ABC, rectangulum ad A: Sitque AB latus circuli quadrans. Dico angulum BCA oppositum, rectum esse. Nam per secundum porisma quarti hujus, B est polus circumferentiæ CA: per quem transit arcus BC. Itaque per primum porisma ejusdem, arcus BC est normalis circumferentiæ CA: & proinde angulus ad C rectus. Fiat vero AD latus quadrante majus, & arcus AB circuli quadrans: erit angulus BCA rectus, per primam hujus Theorematis partem; & proinde DCA obtusus (angulus enim DCA, major est angulo BCA) tandem statuatur latus AE quadrante minus, & arcus AB circuli



circuli quadrans : erit angulus BCA rectus per primam partem hujus , major angulo ECA ; & proinde angulus ECA acutus est.

Conversa eadem ratione demonstratur. sint enim in eodem Triangulo, anguli BCA, & BAC recti : erunt opposita latera BA, & BC, circuli quadrantes. Arcus enim BA, & BC, egredientes normaliter ex peripheria circuli maximi CA, concurrunt in B, ejusdem polo, per secundum porisma quarti hujus : ideoque quadrantes sunt maximorum circularum. Simili ratione demonstratur DA, latus, majus esse circuli quadrante, si angulus ad C obtusus sit ; minus si acutus. Nam si angulus DCA constituatur obtusus, erit BCA rectus, & proinde latus DA majus latere BA circuli quadrante : si ECA constituatur acutus, erit BCA rectus ; & proinde EA minus BA quadrante : quod erat ostendendum.

10. Si trianguli rectanguli latus alterum sit quadrans circuli, etiam basis quadrans est ; si vero utrumque latus quadrante circuli majus sit, aut minus, basis quadrante minor est : quod si latus unum circuli quadrante majus sit, reliquum minus, basis quadrante major est : & contra.



Theorematis hujus partes tres sunt. Prima, basin Trianguli rectanguli esse quadrantem circuli, si latus alterum sit circuli quadrans ; & contra. Esto igitur Sphæricum Triangulum ABC, rectangulum ad A : sitque latus AB circuli quadrans. Dico BC basin etiam circuli quadrantem esse.

Nam per præmissum Theorema, angulus ad C rectus est : & proinde arcus AB & CB, normaliter egrediuntur ex CA circumferentia, concurrunt autem in B polo. Itaque per 2 porisma quarti hujus, maximorum circularum quadrantes sunt.

Conversa hujus partis perspicua est. Sit enim angulus ad A rectus, & BC circuli quadrans. Dico alterutrum laterum etiam circuli quadrantem esse : polo enim B, describatur maximus circulus, secturus circumferentiam BA in A ; vel supra A in D ; infra in E : si secet in A, constat BA latus quadrantem esse per secundum porisma quarti hujus. Si vero in D, aut E punctis, anguli ad D & E recti sunt per primum porisma ejusdem : angulus autem ad

A re-

A rectus est ex *Thesi* ; quare per secundum porisma ejusdem , *C* est polus circumferentiae *BDAE* , & latus *CA* circuli quadrans.

Secunda hujus Theorematis pars est : Basin quadrante minorem esse . si utrumque Trianguli rectanguli latus, quadrante majus sit, aut minus : & contra. Assumatur igitur & hic Triangulum *ABC* , rectangulum ad *A* : continuenturque latera *AB* & *AC* , in *F* oppositum polum ; componentur duo Triangula , *ABC* , & *FBC* , invicem aequalia. Dueto vero arcu *GH* , per puncta *G* & *H* : fiet *GH* basis, communis Triangulo *GAH* rectangulo , habenti latera *AG* & *AH* , quadrante circuli *AB* , vel *AC* , majora ; Itemque Triangulo *CFH* rectangulo reliquo habenti latera *FG* & *FH* quadrante circuli *FB* vel *FC* minora ; basis vero *GH* erit minor *BC* quadrante circuli : rectos angulos ad *F* , & *A* , per 8 hujus mensurante. Secus enim si non sit , vel major erit *BC* arcu , vel aequalis ipsi. Sed major esse nequit : quia Triangulum *ABC* , ad omnes angulos rectangulum , non potest capere latus recto majus. Aequalis esse nequit , quia nemini Trianguli latus circuli quadrans est : consequitur igitur basin *GH* , quadrante minorem esse.

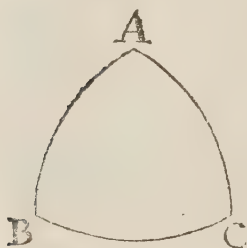
Conversa hujus partis etiam facilis est. Sit enim basis quadrante minor : dico utrumque latus Trianguli rectanguli dati, quadrante majus, aut minus esse. Nam si non sit ; unum quadrans est ; vel unum quadrante majus , & reliquum minus. Atqui si unum latus quadrans sit : est & basis quadrans. Vel si unum latus quadrante majus sit, reliquum minus : basis quadrante major est. Vtrumque est contra *Thesin*. Ergo utrumque latus, vel quadrante majus, vel minus est. Prioris ratio ex prima hujus Theorematis parte clara est : posterioris ex tertia : quæ docet,

Basin quadrante circuli majorem esse , si unum rectanguli Trianguli latus sit quadrante circuli majus , reliquum minus : & contra. Assumatur enim & hic Triangulum *DAH* , rectangulum ad *A* : cujus latus *AD* , sit minus *AB* circuli quadrante ; & reliquum *AH* , majus *AC* circuli quadrante. Dico *DH* basin, etiam quadrante circuli majorem esse : & contra. Arcus enim *AC* , est circuli quadrans ex fabrica : quemadmodum & *DC* per secundum porisma quarti hujus. Quare si polo *D* , in *C* describatur arcus maximi circuli *CI* ; secabit *DH* basin in *I* , proinde *DI* quadrans erit , per citatum porisma , & *DH* quadrante major.

Conversa hujus partis similiter patet ; latus alterum Trianguli rectanguli quadrante majus esse , reliquum minus , si basis quadrante major sit. Secus enim si non sit : erunt latera vel circuli quadrantes ; & tunc basis est quadrans , per primam hujus Theorematis partem : vel utrumque latus erit majus quadrante , vel minus , & tum basis quadrante minor est , per secundam hujus Theorematis

partem. Sed utrumque est contra Theſin. Itaque latus unum quadrante majus ; reliquum minus est : quæ fuere demonſtranda.

11. Si Trianguli rectanguli alteruter angulorum in baſi rectus ſit , baſis eſt circuli quadrans ; ſi uterque vel acutus vel obtuſus ſit , baſis eſt quadrante minor : ſi vero alter eorum acutus ſit , & reliquus obtuſus , baſis quadrante major eſt : & contra.

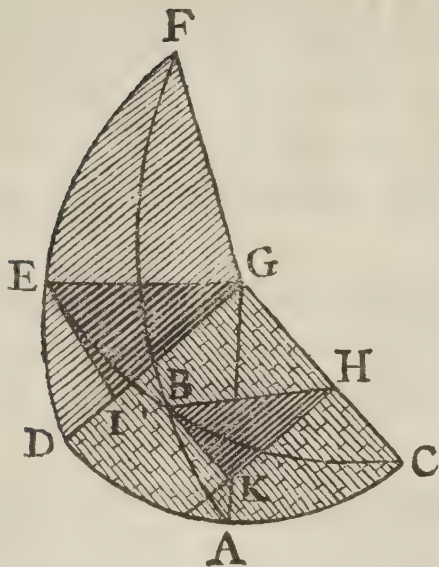


Sit Triangulum ABC rectangulum ad C. Dico AB baſin , circuli quadrantem eſſe , ſi alteruter angulorum in baſi , A , aut B rectus ſit : quadrante minorem ſi uterque vel acutus , vel obtuſus ſit ; majorem , ſi alter acutus , reliquus obtuſus ſit : & contra. Si enim alteruter angulorum A , vel B rectus ſit : alterutrum laterum circuli quadrans eſt per 9 hujus ; ergo per 10 ejusdem , baſis AB etiam circuli quadrans eſt. Sin uterque angulus A & B ſimiliter acutus ſit , aut obtuſus : utrumque latus AC , & CB , per nonam hujus , quadrante majus , vel minus eſt ; ergo per 10 ejusdem , baſis AB quadrante minor eſt. Quod ſi alteruter angulorum A & B acutus ſit , reliquus obtuſus : per 9 hujus , alterutrum laterum quadrante circuli minus , reliquum majus eſt ; ergo per 10 ejusdem baſis AB quadrante major eſt.

Converſa ſimiliter probatur. ſit enim baſis AB circuli quadrans , alteruter angulorum A aut B rectus eſt : Nam per decimam hujus latus alterutrum quadrans circuli eſt , ergo per 9 ejusdem angulus alter rectus eſt. Si vero AB baſis quadrante minor ſit : uterque angulus A & B vel acutus , vel obtuſus eſt ; nam per 10 hujus utrumque latus vel majus eſt vel minus quadrante. Ergo per 9 ejusdem , uterque angulus vel acutus vel obtuſus eſt. Demum ſi AB baſis quadrante major ſit , alteruter angulorum A , aut B acutus eſt , reliquus obtuſus. Nam per 10 hujus , latus unum quadrante minus , reliquum majus eſt : ergo per 9 ejusdem , angulus alter acutus , reliquus obtuſus eſt ; quæ fuerunt oſtendenda.

12. Si quadrans maximi circuli , ad quadrantem maximi inclinatus fuerit , & ab inclinato perpendiculares duo deſcendant , quorum alter utriusque quadrantis terminum ſecet : finis recti ſegmentorum quadrantis inclinati , ab inclinationis angulari puncto , perpendicularium rectis finibus porportionales ſunt.

Eſto



Est CBE maximi circuli quadrans, inclinatus ad CAD maximi circuli quadrantem; & ab CBE inclinato, descendant duo arcus ED & BA : quorum alter ED , secet E & D terminum utriusque quadrantis CBE & CAD . Dico rectas BH & EG , sinus rectos segmentorum CB , & CE , proportionales esse rectis BK & EI , rectis sinibus perpendicularium arcuum BA & ED . Triangula enim GIE & HKB , sunt æquiangula ob rectos angulos ad I , & K , per 7 primi hujus; & similem ad G & H , incli-

nationis scilicet superficiei quadrantis $GE C$, ad superficiem quadrantis GDC ang. Itaque per quartum sexti elementorum, latera quæ subter æquales eos angulos sunt, BH & EG : Item BK & EI , sunt proportionalia; quod erat demonstrandum.

ΠΟΡΙΣΜΑΤΑ οἷο.

Primo itaque, in rectangulo Triangulo, unicum rectum habente, ex data basi, & angulo alterutro obliquo, invenitur latus oppositum. Radius enim est ad sinum basis: ut sinus anguli ad sinum lateris oppositi. Vel, Radius est ad secantem complementi basis; ut secans complementi anguli ad secantem complementi lateris oppositi. Vel sinus basis est ad radium; ut secans complementi anguli, ad secantem complementi lateris oppositi. Vel secans complementi basis est ad radium: ut sinus anguli ad sinum lateris oppositi.

Est in præcedenti Diagrapha, ABC Triangulum rectangulum, unicum rectum habens ad A per primum porisma quarti hujus: deturque BC basis ejus, partium 60; & angulus ACB part. 30. Invenietur AB latus oppositum partium 25 39 32". Nam per quartam sexti elementorum, & 19 septimi,

$$\begin{array}{l}
 \text{Vt EG radius} \\
 10000000
 \end{array}
 \left. \begin{array}{l}
 \text{ad BH sinum} \\
 \text{basis BC} \\
 8660254
 \end{array} \right\}
 \left\{ \begin{array}{l}
 \text{Ita EI sinus arcus} \\
 \text{ED vel anguli} \\
 \text{ACB per 8 hujus} \\
 5000000, \text{ ad}
 \end{array} \right\}
 \begin{array}{l}
 \text{BK sinum late-} \\
 \text{ris oppositi BA} \\
 4330127 \text{ par-} \\
 \text{tiu 25 39' 32"}.
 \end{array}$$

Ergo latus AB est partium 25 39' 32" : quadrante minus per 9 hujus, quia angulus oppositus ACB acutus est.

Demonstratum vero est 20 Theoremate primi hujus, sinum rectum peripheriæ ad radium esse : ut radius ad secantem complementi. Itemque, secantes peripheriarum, complementorum suorum rectis sinibus proportionales esse. Itaque per secundum porisma Theorematis citati,

$$\begin{array}{l}
 \text{Vt radius} \\
 10000000
 \end{array}
 \left. \begin{array}{l}
 \text{ad secantem com-} \\
 \text{plem. basis BC} \\
 11547004
 \end{array} \right\}
 \left\{ \begin{array}{l}
 \text{Ita secans compl.} \\
 \text{anguli dati} \\
 20000000 \text{ ad}
 \end{array} \right\}
 \begin{array}{l}
 \text{secantem compl.} \\
 \text{lateris oppositi} \\
 \text{AB 23094008} \\
 \text{par. 64 20' 28"}.
 \end{array}$$

Quare latus AB est partium 25 39 32 ut supra.

Aliter per primum porisma Theorematis citati,

$$\begin{array}{l}
 \text{Vt sinus basis} \\
 8660254, \text{ ad}
 \end{array}
 \left. \begin{array}{l}
 \text{Radium} \\
 10000000
 \end{array} \right\}
 \left\{ \begin{array}{l}
 \text{Ita secans com-} \\
 \text{plem. ang. dati} \\
 20000000, \text{ ad}
 \end{array} \right\}
 \begin{array}{l}
 \text{secantem compl. late-} \\
 \text{ris oppositi AB} \\
 23094008.
 \end{array}$$

Aliter per secundum porisma ejusdem,

$$\begin{array}{l}
 \text{Vt secans cõp. basis} \\
 11547004 \text{ ad}
 \end{array}
 \left. \begin{array}{l}
 \text{Radium} \\
 10000000
 \end{array} \right\}
 \left\{ \begin{array}{l}
 \text{Ita sinus anguli dati} \\
 5000000, \text{ ad}
 \end{array} \right\}
 \begin{array}{l}
 \text{Sinũ lateris oppositi} \\
 \text{AB 4330127.}
 \end{array}$$

Secundo, data basi, & latere alterutro, exquiritur angulus oppositus. Nam ut sinus basis est ad radium; ita sinus lateris dati ad sinum anguli oppositi. Vel, ut secans complementi basis est ad radium; ita secans complementi lateris, ad secantem complementi anguli oppositi. Aut, ut radius est ad sinum basis; ita secans complementi lateris, ad secantem complementi anguli oppositi. Aut, ut radius est ad secantem complementi basis: ita sinus lateris, ad sinum anguli oppositi.

Retento

Retento superiori Triangulo ABC, sit basis BC partium 60: & latus AB partium 25 39' 32. Invenietur angulus ACB oppositus, partium 30. Nam per quartam sexti & 19 septimi Euclidis,

Vt BH sinus } ad EG radium { BK sinus lateris } EI sinum arcus ED
basis BC } 10000000, ita { AB 4330127, } vel anguli ACB
8660254 } est ad } 5000000.

Angulus itaque ACB quæsitus est partium 30: acutus per 9 hujus, quia latus oppositum est minus circuli quadrante.

Aliter per secundum porisma 20 primi hujus,

Vt secans compl. basis } Radium { Secans compl. } Secantem compl. ang. op-
11547004 ad } 10000000, { lateris dati } positi 20000000,
ita } 23094008 ad } partium 60.

Itaque ipse angulus est partium 30.

Aliter per primum porisma ejusdem,

Vt radius } ad sinum basis { Secans compl. } Secantem compl.
10000000 } 8660254, ita { lateris dati } anguli oppositi
23094008, ad } 20000000.

Aliter per secundum porisma ejusdem,

Vt radius } ad secantem compl. { Sinus lateris dati } Sinum anguli oppo-
10000000 } basis 11547004, { 4330127, ad } siti 5000000
ita } partium 30.

Tertio, dato latere & angulo huic opposito, investigatur basis, si constiterit quadrantene major sit an minor. Nam ut sinus anguli est ad radium; ita sinus lateris, ad sinum basis. Aut, ut secans complementi anguli est ad radium; ita secans complementi lateris, ad secantem complementi basis. Vel, ut radius est ad sinum anguli; ita secans complementi lateris est, ad secantem complementi basis. Aut, ut radius est ad secantem complementi anguli: ita sinus lateris ad sinum basis.

Assumpto & hic superiori Triangulo, detur latus AB partium 25' 39' 32":
& angulus BCA oppositus partium 30; erit BC basis part. 60. si fuerit
quadrante minor: vel 120 si major. Nam per 4 sexti, & 19 sept. Euclidis,

Vt EI sinus angl. } EG radium { Ita BK sinus } ad BH sinū basis BC
ECD 5000000 ad } 10000000 { lateris AB dati } 8660254 minorem
4330127 } quadrante partiū 60.

Aut per secundum porisma 20 primi hujus,

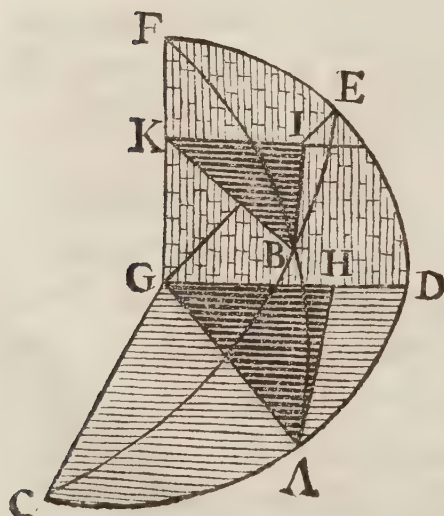
Vt secans compl. } ad radium { Ita secans comp. } Secantem complemen. basis
ang. 20000000 } 10000000 { lateris dati } 11547004 part. 30. ergo
23094008, ad } basis est partium 60.

Vel per primum porisma ejusdem,

Vt radius } Sinum angl. dati { Ita secans compl. lateris } Secantē compl. ba-
10000000 ad } 5000000 { dati 23094008, ad } sis 11547004.

Vel per secundum porisma citatæ,

Vt radius } Secantē compl. angl. { Sinus lateris dati } ad sinum basis
10000000 ad } 20000000, ita { 433012 } 8660254 ut supra.



Quarto, dato latere alteru-
tro & basi, innotescit latus reli-
quum: sinus enim complemen-
ti lateris dati est ad radium; ut
sinus complementi basis, ad si-
num complementi lateris reli-
qui. Vel, secans lateris dati est
ad radium; ut secans basis ad
secantem reliqui lateris. Vel,
radius est ad sinum comple-
menti lateris; ut secans basis ad
secantem lateris alterius. Vel,
radius est ad secantem lateris;
ut

ut finus complementi basis , ad finum complementi lateris reliqui.

Sit & hic Trianguli ABC , latus AB partium 25 39' 32" : & BC basis partium 60. Invenietur reliquum latus AC , partium 56, 18', 35". Nam per quartam sexti, & 19 septimi Euclidis ,

Vt BK finus ar-
cus FB , comple. } ad AG radium { BI finus arcus } ad AH sinu arcus
lateris AB dati } 10000000, ita { BE, .i. comp. } AD comp.lat. AC
9013880 } basis BC { 5547002 partium
5000000, } 33 41 25.

Itaque AC latus est partium 56 18' 35", quadrante minus per 10 hujus, quia basis cum reliquo latere sigillatim quadrante minor est.

Aliter per 2 porisma vicesima primi hujus ,

Vt secans lateris } ad radium { Ita secans basis } ad secantem reliqui late-
dati 11094005 } 10000000 { 20000000 } ris 18027760 partium
56 18' 35".

Vel per primum porisma ejusdem ,

Vt radius } ad sinum comp.late- { Ita secans basis } ad secantem reliqui la-
10000000 } ris dati 9013880 { 20000000 } teris 18027760.

Vel per secundum porisma ejusdem ,

Vt radius } ad secantem lateris { Ita sinus comp. } ad sinum comp. lateris
10000000 } dati 11094005 { basis 5000000 } quaesiti 5547002.

Quinto, dato utroque latere investigatur basis. Nam, ut radius est ad finum complementi lateris alterutrius : ita finus complementi lateris reliqui , est ad finum complementi basis. Vel, radius est ad secantem lateris alterutrius, ut secans lateris reliqui ad secantem basis. Vel , finus complementi lateris alterutrius est ad radium; ut secans lateris reliqui , ad secantem basis. Vel , secans lateris alterutrius est ad radium ; ut finus complementi lateris reliqui , ad finum complementi basis.

Detur in Triangulo ABC, latus AB partium 25 39' 32": & AC reliquum latus partium 56 18' 35". inuenietur basis BC partium 60. Nam per 4 sexti, & 19 septimi Euclidis;

$$\begin{array}{l} \text{Vt A G radius} \left. \begin{array}{l} \text{ad BK sinũ arcus} \\ \text{FB .i.cõpl.lateris} \\ \text{AB 9013880} \end{array} \right\} \begin{array}{l} \text{Ita AH sinus arcus} \\ \text{DA .i. cõpl.later.} \\ \text{DC 5547002} \end{array} \left. \begin{array}{l} \text{ad BI sinũ arcus} \\ \text{EB .i.cõp.bas.BC} \\ \text{5000000 par.30} \end{array} \right\} \end{array}$$

Ergo basis BC est partium 60, minor circuli quadrante per 10 hujus, quia utrumque latus sigillatim quadrante minus est.

Aliter per secundum porisma 20 primi hujus,

$$\begin{array}{l} \text{Vt radius} \left. \begin{array}{l} \text{ad secantẽ lateris} \\ \text{AB 11094005} \end{array} \right\} \begin{array}{l} \text{Ita secans lateris} \\ \text{AC 18027760} \end{array} \left. \begin{array}{l} \text{ad secantem basis} \\ \text{20000000, part. 60.} \end{array} \right\} \end{array}$$

Vel per primum porisma ejusdem,

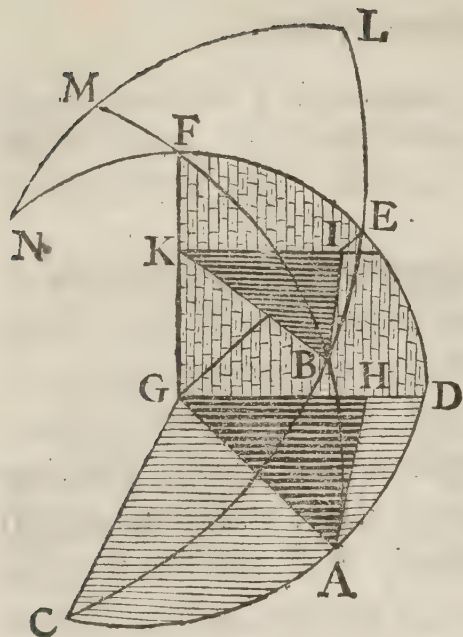
$$\begin{array}{l} \text{Vt sinus comp.lat.} \left. \begin{array}{l} \text{ad radium} \\ \text{AB 9013880} \end{array} \right\} \begin{array}{l} \text{Ita secans reliqui} \\ \text{lateris 18027760} \end{array} \left. \begin{array}{l} \text{ad secantem basis} \\ \text{20000000} \end{array} \right\} \end{array}$$

Vel per secundum porisma ejusdem,

$$\begin{array}{l} \text{Vt secans lat.} \left. \begin{array}{l} \text{ad radium} \\ \text{AB 11094005} \end{array} \right\} \begin{array}{l} \text{Ita sinus compl.lateris} \\ \text{reliqui 5547002} \end{array} \left. \begin{array}{l} \text{ad sinum cõp.ba-} \\ \text{sis 5000000.} \end{array} \right\} \end{array}$$

Sexto, dato latere & angulo adjacente, innotescit obliquus alter. Radius enim est ad finum complementi lateris: ut sinus anguli, ad finum complementi reliqui. Aut, radius est ad secantem lateris dati; ut secans complementi anguli, ad secantem anguli reliqui. Aut, sinus complementi lateris dati est ad radium; ut secans complementi anguli, ad secantem reliqui. Aut, secans lateris dati est ad radium; ut sinus anguli, ad finum complementi reliqui.

Repetita postrema Trianguli nostri figura, detur latus AC partium 56 18' 35": angulusque ei adjacens ACB partium 30. Inuenietur reliquus obli-



obliquus ABC, part. 73 53' 52"
 & paulo plus. Continuentur enim arcus, BE in L; BF in M: & EF in N; ut BL, BM, & EN, quadrantes sint maximorum circulo-
 rum. Facto vero N polo, describatur maximi circuli quadrans NML, per terminos quadrantum BM, & BL. Manifestum est angulum ad M, in Triangulo NMF rectum esse, per primum porisma quarti hujus: & basin FN, complementum esse arcus FE; & proinde æqualem arcui ED. Item angulum ad F, æqualem esse angulo AFD, vel arcui AD, complemento scilicet lateris AC. Quare cum in eodem Triangulo NMF re-

Et angulo, detur basis FN, æqualis angulo ACB: & angulus ad F æqualis complemento lateris AC; dabitur etiam oppositum angulo latus NM, complementum scilicet arcus ML, angulum ad B quæsitum subtendentis. Nam per primum porisma hujus,

Vt radius } ad basin FN .i. { Ita ang. MFN } ad MN .i. sinu comp. an-
 10000000 } sinu ang. ACB { .i. sinus comp. lat. } guli ad B, 2773501
 5000000 { AC 5547002 } partium 16 6' 8" fere.

Ergo angul. ABC est partium 73 53' 52"; acutus per 9 hujus, quia oppositum ei latus AC quadrante minus est.

Aliter per 2 porisma 20 primi hujus,

Vt radius } ad secantem { Ita secans lateris } ad secantem angul. reliqui
 10000000 } compl. ang. dati { dati 18027760 } 36055520 part. 73
 20000000 { } 53' 52", ut supra.

Vel per primum porisma ejusdem,

Vt sinus anguli } ad radium { Ita secans lateris } ad secantem anguli re-
 dati 5000000 } 10000000 { dati 18027760 } liqui 36055520.

Vel

Vel per secundum porisma ejusdem,

$$\begin{array}{l} \text{Vt secans comp. ang.} \\ \text{dati } 20000000 \end{array} \left. \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{Ita sinus compl.} \\ \text{lateris dati} \\ 5547002 \end{array} \left. \begin{array}{l} \text{ad sinum compl.} \\ \text{anguli reliqui} \\ 2773501. \end{array} \right\}$$

Septimo, dato latere, & angulo opposito; datur obliquus reliquus, si species ejus nota sit. Sinus enim complementi lateris dati est ad radium; ut sinus complementi anguli dati ad sinum reliqui. Vel, secans lateris dati est ad radium; ut secans anguli dati, ad secantem complementi reliqui. Vel, radius est ad sinum complementi lateris dati: ut secans anguli dati, ad secantem complementi reliqui. Vel, radius est ad secantem lateris; ut sinus complementi anguli dati, ad sinum reliqui.

Detur in Triangulo ABC latus AB partium 25 39' 32": & angulus ei oppositus ACB partium 30; cum specie reliqui ad B acuta. Invenietur ipse angulus ad B partium 73 53' 52". Nam in Triangulo FMN rectangulo, datur latus FM, æquale lateri AB: & basis NF æqualis arcui DE, .i. angulo ACB. Ergo & reliquum latus NM, .i. complementum arcus ML, vel anguli ad B, per quartum porisma hujus innotescit. Nam,

$$\begin{array}{l} \text{Vt sinus cõp. MF} \\ \text{.i. AB lat. dati} \\ 9013880 \end{array} \left. \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{Ita sinus cõpl. basis} \\ \text{NF .i. ang. dati} \\ 8660254 \end{array} \left. \begin{array}{l} \text{ad sinũ ML .i. ang. ad} \\ \text{B} \\ 9607690 \text{ part. } 73 \\ 53 \text{ } 52, \text{ acuti ex thesi.} \end{array} \right\}$$

Vel per secundum porisma 20 primi hujus,

$$\begin{array}{l} \text{Vt secans AB} \\ \text{lateris dati} \\ 11094005 \end{array} \left. \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{Ita secans ang.} \\ \text{ACB dati} \\ 11547004 \end{array} \left. \begin{array}{l} \text{ad secantem complementi} \\ \text{angul. reliqui} \\ \text{partium } 16 \text{ } 6' \text{ } 8''. \end{array} \right\}$$

Ergo ipse angulus est partium 73 53' 52".

Vel per primum porisma ejusdem,

$$\begin{array}{l} \text{Vt radius} \\ 10000000 \end{array} \left. \begin{array}{l} \text{ad sinũ cõp. lateris} \\ \text{dati } 9013880 \end{array} \right\} \begin{array}{l} \text{Ita secans anguli} \\ \text{ACB } 11547004 \end{array} \left. \begin{array}{l} \text{ad secantem compl. ang.} \\ \text{reliqui } 10408330. \end{array} \right\}$$

Vel

Vel per secundum porisma 20 primi hujus,

$$\left. \begin{array}{l} \text{Vt radius} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{ad secantem lateris} \\ AB \ 11094005 \end{array} \left\{ \begin{array}{l} \text{Ita sinus compl.} \\ \text{ang. } ACB \text{ dati} \\ 8660254 \end{array} \right\} \begin{array}{l} \text{ad sinum anguli re-} \\ \text{liqui } 9607690 \end{array}$$

Postremo, dato utroque angulo obliquo, datur etiam latus alterutrum. Sinus enim anguli unius, se habet ad radium; ut sinus complementi reliqui, ad sinum complementi lateris oppositi. Aut, secans complementi anguli unius est ad radium; ut secans alterius, ad secantem lateris oppositi. Vel, radius est ad sinum anguli alterutrius; ut secans anguli reliqui, ad secantem lateris oppositi. Vel, radius est ad secantem complementi anguli unius; ut sinus complementi alterius, ad sinum complementi lateris oppositi.

Manente postremo diagrammate, detur in Triangulo ABC rectangulo, uterque obliquus angulus ad B & C : dabitur etiam alterutrum latus. Nam in Triangulo MFN rectangulo, datur latus MN , complementum arcus LM , subtendentis angulum ad B : & basis NF , complementum scilicet arcus FE , .i. arcus ED , subtendens angulum ad C . Ergo & angulus ad F oppositus, .i. arcus DA , vel complementum lateris AC invenietur. Nam per 2 porisma hujus,

$$\left. \begin{array}{l} \text{Vt sinus basis} \\ FN \text{ .i. ang. ad} \\ C, 5000000 \end{array} \right\} \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \left\{ \begin{array}{l} \text{Ita sinus lateris} \\ MN \text{ .i. cōp. ang.} \\ \text{ad } B \ 2773501 \end{array} \right\} \begin{array}{l} \text{ad } MFN \text{ sinum ang.} \\ \text{oppositi .i. comple. lateris} \\ AC \ 5547002 \text{ partium} \\ 16 \ 6' \ 8'', \text{ fere.} \end{array}$$

Ergo ipsum latus AC est partium $73 \ 53' \ 52''$ paulo plus: quadrante minus per 9 hujus, quia angulus oppositus acutus est.

Aliter per 2 porisma 20 primi hujus,

$$\left. \begin{array}{l} \text{Vt secans cōpl.} \\ \text{anguli ad } C \\ 20000000 \end{array} \right\} \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \left\{ \begin{array}{l} \text{Ita secans ang.} \\ \text{reliqui ad } B \end{array} \right\} \left\{ \begin{array}{l} \text{ad secantem lateris oppositi,} \\ 18027760, \text{ par. } 73 \ 53' \ 52'' \\ 36055520, \text{ paulo plus, ut supra.} \end{array} \right.$$

S

Vel

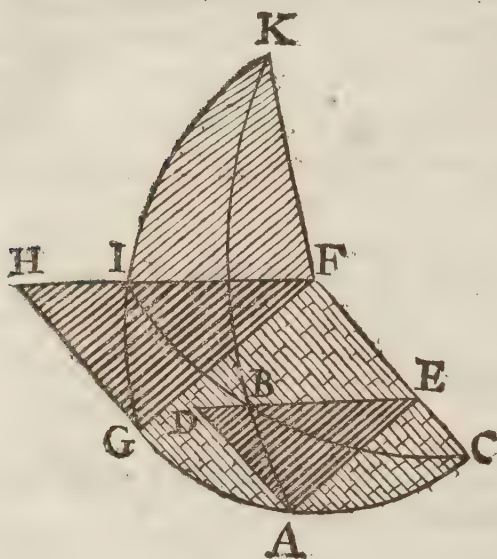
Vel per primum porisma 20 primi hujus,

Ut radius } ad sinum ang. ad { Ita secans ang. ad } ad secantē lateris op-
10000000 } C 5000000 { B 36055520 } positi 18027760.

Vel per secundum porisma ejusdem,

Ut radius } ad secantem comp. ang. { Ita sinus comp. } ad sinum compl.
10000000 } ad C 20000000 { anguli reliqui } lateris oppositi
2773501 } 5547002.

13. Si quadrans maximi circuli, quadrantem maximi secet, & à secante, duo arcus perpendiculares secto ducantur, quorum alter per utriusque quadrantis terminum transeat; sinus recti segmentorum quadrantis secti, à puncto sectionis, perpendicularium tangentibus proportionales sunt.



Maximi circuli quadrans IBC, secet GAC quadrantem maximi in C: & ab IBC secante, descendant perpendiculares arcus duo, IG & BA; quorum alter IG, transeat per terminum utriusque quadrantis I & G. Dico sinus rectos GF & AE, segmentorum CI & CA: proportionales esse tangentibus HG, & DA, perpendicularium IG & BA. Triangula enim HGF, & DAE, sunt æquiangula: ob rectos angulos ad G & A, per 15 primi hujus; Communem ad F & E, inclinationis scilicet angulum superficiæ quadrantis secan-

tis, ad superficiem quadrantis secti. Itaque per quartam sexti elementorum sunt laterum proportionalium. Quare ut GF, ad AE: Ita HG ad DA, quod erat demonstrandum.

ΠΟΡΙΣΜΑΤΑ octo.

Primo igitur in rectangulo Triangulo, dato latere & angulo adjacente, investigatur latus reliquum. Radius enim est ad sinum lateris dati; ut tangens anguli adjacentis, ad tangentem reliqui lateris. Vel, radius est ad secantem complementi lateris: ut tangens complementi anguli adjacentis, ad tangentem complementi lateris alterius. Vel, sinus lateris dati est ad radium: ut tangens complementi anguli adjacentis, ad tangentem complementi lateris reliqui. Vel, secans complementi lateris dati, est ad radium: ut tangens anguli adjacentis, ad tangentem reliqui lateris.

Assumpto & hic Triangulo ABC rectangulo, detur latus AC partium 56 18' 35": & angulus adjacens ad C partium 30. invenietur reliquum latus AB, part. 25 39' 32". Nam per 4 sexti & 19 septi. Euclidis,

$$\text{Vt GF radius} \left\{ \begin{array}{l} \text{ad AE sinũ} \\ \text{lateris AC} \end{array} \right. \left\{ \begin{array}{l} \text{Ita GH tan-} \\ \text{gens arcus IG} \\ \text{i. ang. ad C;} \end{array} \right. \left\{ \begin{array}{l} \text{ad AD tangentem later. AB} \\ 4803831 \text{ par. } 25\ 39'\ 32'' \\ \text{quadrã. minoris per 9 hujus} \\ 5773502 \text{ quia ang. oppos. acutus est.} \end{array} \right.$$

10000000 8320482

Demonstratum vero est 20 Theoremate primi hujus, secantes arcuum, complementorum suorum rectis sinibus: itemque 17 ejusdem, tangentes arcuum complementorum suorum tangentibus proportionales esse. Itaque si loco sinũ, tangentiumque peripheriarum datarum, assumantur complementorum secantes & tangentes, manebit eadem proportio. Quare,

$$\text{Vt radius} \left\{ \begin{array}{l} \text{ad secantẽ cõp.} \\ \text{lateris dati} \end{array} \right. \left\{ \begin{array}{l} \text{Ita tangens comp.} \\ \text{anguli ad C} \end{array} \right. \left\{ \begin{array}{l} \text{ad tang. comp. lateris oppo-} \\ \text{siti AB} \\ \text{partium } 64\ 20'\ 28'' \end{array} \right.$$

10000000 12018535 17320508

Ergo ipsum latus est partium 25 39' 32".

Vel, quia radius media proportionem est ad tangentes peripheriæ & complementi, per 17 primi hujus,

$$\text{Sinus lateris AC} \left\{ \begin{array}{l} \text{est ad radium} \\ 8320482 \end{array} \right. \left\{ \begin{array}{l} \text{ut tangens cõp.} \\ \text{anguli dati} \end{array} \right. \left\{ \begin{array}{l} \text{ad tangent. complementi} \\ \text{lateris AB oppositi} \\ 20816713 \end{array} \right.$$

10000000 17320508

Vel,

Secans cōp. lateris } est ad radium { ut tangens anguli } ad tangent. lateris AB
AC 12018535 } 10000000 { ad C 5773502 } oppositi 4803831.

Secundo, dato latere & angulo opposito, exquiritur reliquum latus, si constiterit quadrantene majus sit an minus. Nam ut tangens anguli dati est ad radium: ita tangens lateris oppositi, ad sinum anguli reliqui. Vel, ut tangens complementi anguli noti, ad radium est: ita tangens complementi lateris oppositi, ad secantem complementi lateris alterius. Vel, ut radius ad tangentem anguli dati; ita tangens complementi alterius lateris, ad secantem complementi lateris oppositi. Vel, ut radius ad tangentem complementi anguli dati: ita tangens lateris oppositi, ad sinum lateris reliqui.

Manente figura superioris Trianguli, sit latus AB part. 25 39' 32": & angulus ad C oppositus partium 30; dabitur reliquum latus AC partium 56 18' 35". Nam per 4 sexti & 19 septimi Euclidis,

Ut GH tangen. arcus IG .i. ang. ad C 5773502	} ad GF radiū 10000000	{ Ita AD tāg. lateris AB oppositi 4803831	ad AE sinū lateris reliqui
			AC 8320482. part. 56 18' 35" si minus qua- drante sit, partium vero 123 41' 25", si majus sit.

Vel per 17 & 20 primi hujus,

Ut tangens cōp. anguli ad C 17320508	} ad radium 10000000	{ Ita tangens compl. later. oppositi AB 20816713	ad secantem compl. later.
			AC 12018535. par. 33 41 25.

Ergo si ipsum latus quadrante minus est, partium est 56 18' 35".

Vel per 17 primi hujus,

Ut radius 10000000	} ad tangent. ang.	{ Ita tang. comp. late. op- positi AB 20816713	ad secan. cōp. lateris
			AC 12018535.

Vel

Vel,

$$\text{Ut radius } 10000000 \left\{ \begin{array}{l} \text{ad tangentem compl. an-} \\ \text{guli ad C } 17320508 \end{array} \right\} \left\{ \begin{array}{l} \text{Ita tangens later.} \\ \text{oppositi AB} \\ 4803831 \end{array} \right\} \left\{ \begin{array}{l} \text{ad sinum lateris} \\ \text{reliqui AC} \\ 8320482. \end{array} \right.$$

Tertio, dato utroque latere, datur angulorum obliquorum alteruter, sinus enim lateris alterutrius est ad radium; ut tangens reliqui lateris, ad tangentem anguli oppositi. Aut, secans complementi lateris alterutrius ad radium est: ut tangens complementi alterius lateris, ad tangentem complementi anguli oppositi. Aut, radius est ad sinum lateris alterutrius: ut tangens complementi reliqui lateris, ad tangentem complementi anguli oppositi. Vel, radius est ad secantem complementi lateris unius: ut tangens alterius, ad tangentem anguli oppositi.

Retento superiori Triangulo ABC, detur latus AB part. 25 39' 32": AC partium 56 18' 35". invenietur angulus ad C partium 30. Nam per 4 sexti & 19 septimi Euclidis,

$$\text{Ut AE sinus lateris AC } 8320482 \left\{ \begin{array}{l} \text{ad GF radiũ} \\ 10000000 \end{array} \right\} \left\{ \begin{array}{l} \text{Ita AD tan-} \\ \text{gens reliqui} \\ \text{lateris AB} \\ 4803831 \end{array} \right\} \left\{ \begin{array}{l} \text{ad GH tangentẽ arcus IG. i.} \\ \text{ang. ad C oppositi } 5773502. \\ \text{partium } 30 : \text{acuti per } 9 \text{ hu-} \\ \text{jus, quia latus oppositum est} \\ \text{quadrante minus.} \end{array} \right.$$

Aliter per 17 & 20 primi hujus,

$$\text{Ut secans cõp. lat. AC } 12018535 \left\{ \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \right\} \left\{ \begin{array}{l} \text{Ita tangens cõp.} \\ \text{reliqui lateris} \\ \text{AB } 20816713 \end{array} \right\} \left\{ \begin{array}{l} \text{ad tangentem compl. an-} \\ \text{guli ad C oppositi} \\ 17320508 \text{ par. } 60. \end{array} \right.$$

Ergo ipse angulus est partium 30, ut supra.

Vel per 17 primi hujus,

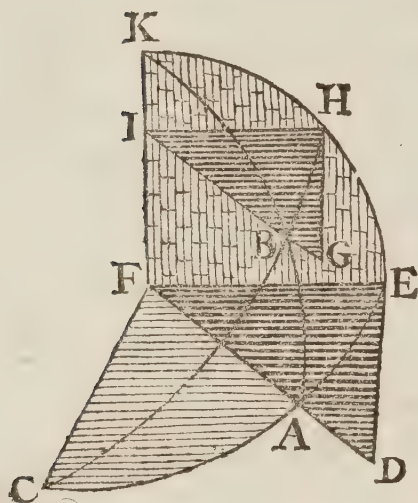
$$\text{Ut radius } 10000000 \left\{ \begin{array}{l} \text{ad sinum la-} \\ \text{teris AC } 8320482 \end{array} \right\} \left\{ \begin{array}{l} \text{Ita tangens compl.} \\ \text{reliqui lateris AB} \\ 20816713 \end{array} \right\} \left\{ \begin{array}{l} \text{ad tangentem compl. ang. ad C} \\ \text{oppositi } 17320508. \end{array} \right.$$

S 3

Vel

Vel per idem Theorema,

Ut radius } *ad secantem cōp.* { *Ita tang. reli-* } *ad tangentem ang. ad C op-*
10000000 } *lateris AC* { *qui lat. AB* } *positi 5773502.*
 } *12018535* { *4803831* }



Quarto, data basi & angulo, investigatur latus adjacens. Nam ut sinus complementi anguli dati ad radium: ita tangens complementi basis est, ad tangentem complementi lateris dato angulo adjacentis. Vel, ut secans anguli dati est ad radium: ita tangens basis, ad tangentem lateris dato angulo adjacentis. Aut, radius est ad finum complementi anguli dati; ut tangens basis ad tangentem lateris angulo dato

adjacentis. Aut, radius est ad secantem anguli dati: ut tangens complementi basis, ad tangentem complementi lateris dato angulo adjacentis.

Assumpto & *hic Triangulo ABC rectangulo, detur basis BC part. 60: & angulus ad C partium 30. inuenietur latus AC part. 56 18' 35". Nam per quartam sexti & 19 septimi Euclidis,*

Ut IH sinus ar- } *Ita HG tangens* } *ad ED tangentem ar-*
cus KH compl. } *ad FE radiū* } *cus EA .i. comp. late-*
HE .i. ang. ad } *10000000* } *plementi basis* } *ris AC 6666665.*
C 8660254 } *BC 5773502* } *partiū 33 41' 25".*

Ergo ipsum latus AC est partium 56 18' 35". quadrante minus per 9 & 10 hujus. Nam propter angulum ad C acutum, latus AB quadrante minus est: propter basin verò etiam quadrante minorem, reliquum latus AC quadrante minus est.

Vel

Vel per 17 & 20 primi hujus,

$$\left. \begin{array}{l} \text{Vt secans an-} \\ \text{guli ad C} \\ 11547004 \end{array} \right\} \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \left\{ \begin{array}{l} \text{Ita tangens basis} \\ 17320508 \end{array} \right\} \begin{array}{l} \text{ad tangentem lateris AC} \\ \text{angulo dato adjacentis} \\ 15000000 \text{ partium} \\ 56 \text{ } 18' \text{ } 35''. \end{array}$$

Vel per 17 primi hujus,

$$\left. \begin{array}{l} \text{Vt radius} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{ad sinũ cõp.} \\ \text{ang. ad C} \\ 8660254 \end{array} \left\{ \begin{array}{l} \text{Ita tangens basis} \\ 17320508 \end{array} \right\} \begin{array}{l} \text{ad tangen. lateris AC ang. dato} \\ \text{adjacentis } 15000000 \text{ par-} \\ \text{tium } 56 \text{ } 18' \text{ } 35''. \end{array}$$

Vel,

$$\left. \begin{array}{l} \text{Vt radius} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{ad secantem} \\ \text{anguli ad C} \\ 11547004 \end{array} \left\{ \begin{array}{l} \text{Ita tangens comp.} \\ \text{basis } 5773502 \end{array} \right\} \begin{array}{l} \text{ad tangentem complementi la-} \\ \text{teris AC } 6666665. \text{ ut} \\ \text{supra.} \end{array}$$

Quinto, dato latere & angulo adjacente, invenitur basis. Radius enim est ad sinum complementi anguli: ut tangens complementi lateris ad tangentem complementi basis. Aut, radius est ad secantem anguli; ut tangens lateris ad tangentem basis. Vel, sinus complementi anguli est ad radium, ut tangens lateris ad tangentem basis. Vel, secans anguli est ad radium; ut tangens complementi lateris ad tangentem complementi basis.

Maneat & hic postremum nostrum diagramma, deturque in Triangulo ABC, latus AC partium 56 18' 35": angulisque ad C, part. 30. invenietur basis BC partium 60. Nam per quartam sexti & decimanonam septimi Euclidis,

$$\left. \begin{array}{l} \text{Vt FE radius} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{ad IH sinum ar-} \\ \text{cus KH .i. comp.} \\ \text{HE, vel ang. ad} \\ \text{C, } 8660254 \end{array} \left\{ \begin{array}{l} \text{Ita tangens ED .i.} \\ \text{comp. lateris AC,} \\ 6666665 \end{array} \right\} \begin{array}{l} \text{ad HG, tãgen-} \\ \text{tem HB, comp.} \\ \text{basis, } 5773502. \\ \text{partium } 30. \end{array}$$

Ergo basis est partium 60, quadrante minor per 10 hujus, quia utrumque
latus

latus singulatim quadrante minus est: AC quidem ex thesi, AB vero propter angulum ad C acutum.

Vel per 17 & 20 Theorema primi hujus,

Ut radius } *ad secantem ang.* { *Ita tangens lateris* } *ad tangentem basis*
 100000000 } *ad C 11547004* { *AC 15000000* } 17320508, pa. 60.

Vel per 17 primi hujus,

$\left. \begin{array}{l} \text{Per sinus cōp. ang.} \\ \text{ad C 8660254} \end{array} \right\} \text{ad radium } \left\{ \begin{array}{l} \text{Ita tangens lateris} \\ \text{A C 15000000} \end{array} \right\} \text{ad tangentem basis}$
 $\left. \begin{array}{l} \\ \end{array} \right\} 10000000 \left\{ \begin{array}{l} \\ \end{array} \right\} 17320508, \text{ pa. 60.}$

Vel per idem Theorema,

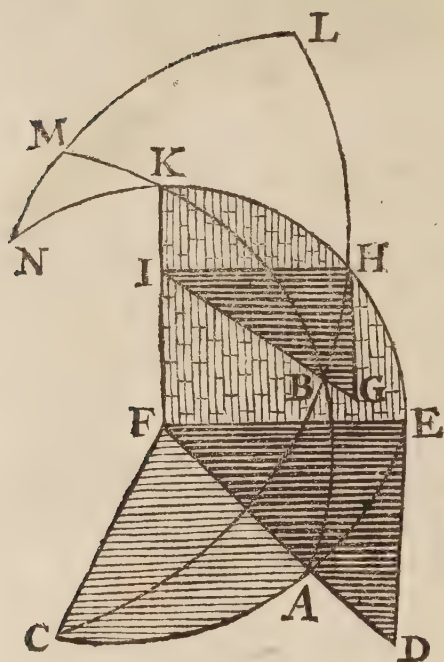
$\left. \begin{array}{l} \text{Vt secans ang. ad} \\ \text{C 11547004} \end{array} \right\} \begin{array}{l} \text{ad radium} \\ \text{10000000} \end{array} \left\{ \begin{array}{l} \text{Ita tangens comple-} \\ \text{menti lateris AC} \\ \text{6666665} \end{array} \right\} \begin{array}{l} \text{ad tangentem comp. ba-} \\ \text{sis 5773502, ut} \\ \text{supra.} \end{array}$

Sexto, data basi & latere, manifestatur angulus adjacens. Tangens enim complementi lateris dati est ad radium; ut tangens complementi basis ad finum complementi anguli adjacentis. Vel, tangens lateris dati est ad radium; ut tangens basis ad secantem anguli adjacentis. Vel, radius est ad tangentem complementi lateris dati; ut tangens basis ad secantem anguli adjacentis. Vel, radius est ad tangentem lateris dati; ut tangens complementi basis, ad finum complementi anguli adjacentis.

Repetita & hic superiori Trianguli nostri figura, detur BC basis partium 60: latusque AC partium 56 18 35. invenietur angulus ad C adiacens partium 30. Nam per 4 sexti & 19 septimi Euclidis,

<i>Ut</i> ED tangens <i>arcus</i> EA .i. cōp. <i>lateris</i> AC 6666665.	} <i>ad</i> FE <i>radius</i> 10000000	<i>Ita</i> GH tangens <i>arcus</i> HB .i. cōm- plem. <i>basis</i> BC 5773502	} <i>ad</i> IH <i>sinū arcus</i> KH .i. cōp. HE vel <i>anguli</i> <i>ad</i> C 8660254, <i>par.</i> 60.
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Ergo ipse angulus ad C est partium 30, acutus: basis enim CB est minor quadrante. Itaque per 10 hujus, utrumque latus AD & BD est qua-



tium 73 53' 52". Repetitur enim figura, quæ fuit sexto porismate Theorematis præmissi. Demonstratum fuit, illic, arcum HL æqualem esse basi BC, & mensuram esse anguli ad N, in Triangulo NMK rectangulo ad M: Item EH mensuram anguli ad C in Triangulo ABC, æqualem esse basi NK in Triangulo NMK; ML vero arcum, mensuram esse anguli ad B quæsitæ, & MN complementum ejusdem. Quare cum in Triangulo NMK, detur angulus ad N, cum basi NK: dabitur etiam per quartum hujus NM, latus angulo adjacens, .i. complementum anguli ad B quæsitæ. Nam,

$$\left. \begin{array}{l} \text{Vt sinus comp.} \\ \text{ang. ad N. i.} \\ \text{basis datæ} \\ 5000000 \end{array} \right\} \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \left\{ \begin{array}{l} \text{Ita tangens comp.} \\ \text{basis NK. i. ang.} \\ \text{ad C } 17320508 \end{array} \right\} \begin{array}{l} \text{ad tangentē comp. MN .i.} \\ \text{ad tangentem arcus ML} \\ \text{vel ang. ad B } 34641016 \\ \text{part. } 73 \ 53' \ 52'' \text{ acuti.} \end{array}$$

Nam quia basis quadrante minor est, latera sunt quadrante majora, vel minora similiter per 10 hujus. Sed AB latus quadrante minus est per 9 hujus, propter angulum ad C oppositum acutum: Ergo & reliquum latus quadrante minus est, & reliquus angulus acutus. Aliter per 17 vel 20 primi hujus,

$$\left. \begin{array}{l} \text{Vt secans basis} \\ 20000000 \end{array} \right\} \begin{array}{l} \text{ad radium} \\ 10000000 \end{array} \left\{ \begin{array}{l} \text{Ita tang. ang.} \\ \text{guli ad C} \\ 5773502 \end{array} \right\} \begin{array}{l} \text{ad tangentem complementi} \\ \text{anguli reliqui } 2886751 \\ \text{partium } 16 \ 6' \ 8''. \end{array}$$

Vel per 17 primi hujus,

$$\left. \begin{array}{l} \text{Vt radius} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{ad sinum compl.} \\ \text{basis } 5000000 \end{array} \left\{ \begin{array}{l} \text{Ita tang. ang. ad} \\ \text{C } 5773502 \end{array} \right\} \begin{array}{l} \text{ad tang. comp. anguli reli-} \\ \text{qui } 2886751. \end{array}$$

Vel per idem Theorema,

$$\left. \begin{array}{l} \text{Vt radius} \\ 10000000 \end{array} \right\} \begin{array}{l} \text{ad secantem basis} \\ 20000000 \end{array} \left\{ \begin{array}{l} \text{Ita tang. comp. ang.} \\ \text{ad C } 17320508 \end{array} \right\} \begin{array}{l} \text{ad tangent. ang. reli-} \\ \text{qui } 34641016. \end{array}$$

Postremo,

Postremo, dato utroque angulo obliquo datur basis. Tangens enim anguli alterutrius est ad radium; ut tangens complementi anguli reliqui, ad finum complementi basis. Vel, tangens complementi anguli alterutrius est ad radium; ut tangens anguli reliqui ad secantem basis. Aut, radius est ad tangentem anguli alterutrius; ut tangens anguli reliqui ad secantem basis. Aut, radius est ad tangentem complementi anguli alterutrius; ut tangens complementi anguli reliqui ad finum complementi basis.

Manente superiori diagrapha, detur angulus ad C part. 30: & reliquus ad B partium 73 53' 52". Dabitur basis BC partium 60. Assumatur enim & hic Triangulum NMK rectangulum: in quo cum detur latus NM, complementum scilicet arcus ML .i. anguli ad B; & basis NK, æqualis arcui HE, .i. angulo reliquo ad C, datur etiam angulus ad N, vel arcus LH .i. basis BC. Nam per 6 porisma hujus,

<i>Vt tangens compl.</i>	} ad radium	<i>Ita tangens comple.</i>	} ad finum comp. ang. ad	
NM .i. arcus ML		basis NK, .i. ar-		N .i. arcus LH vel
vel angul. ad B,		cus HE vel ang.		basis BC
34641016		ad C 17320508		partium 30.

Ergo basis est partium 60, quadrante minor per 11 hujus, quia angulus uterque acutus est.

Aliter per 17 & 20 Theorema primi hujus,

<i>Vt tangens cōp. ang.</i>	} ad radium	<i>Ita tang. ang. ad</i>	} ad secantem basis
ad B 2886751		C 5773502	

Vel per 17 primi hujus,

<i>Vt radius</i>	} ad tang. ang. ad	<i>Ita tangens anguli</i>	} ad secantem basis
10000000		B 34641016	

Vel per idem Theorema,

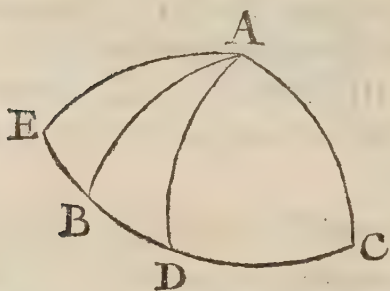
<i>Vt radius</i>	} ad tang. comp. ang.	<i>Ita tang. comp. ang.</i>	} ad finum compl. ba-
10000000		ad B 2886751	

Atque ita calculus rectangulorum Triangulorum expositus est. Sequitur Obliquan-

Obliquangulorum Sphæricorum Calculus.

14. Triangulum obliquangulum Sphæricum est, cujus tres anguli obliqui sunt.

15. Si triangulum obliquangulum, acutos duos angulos aut obtusos habuerit, perpendicularis arcus, ab angulari puncto tertii egrediens, cadit intra triangulum: sin angulorum alter acutus, & reliquus obtusus extiterit, cadit extra.



Esto obliquangulum Triangulum ABC , acutangulum ad B & C : dico perpendicularem AD , demissum ab A vertice anguli tertii, cadere intra Triangulum. Nam si non cadit intra: vel lateri alterutri coincidat, vel extra cadat necesse est. Si lateri alterutri coincidat: tunc angulus ad C , vel B rectus est, quod est contra thesin. Si extra cadit exempli gratia in E : angulus ad E rectus

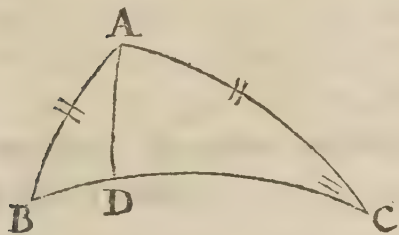
est. Sed angulus ABE obtusus est, reliquus scilicet acuti ABC . Itaque per 9 hujus, latus AE est majus circuli quadrante. Rursus quia angulus ad C acutus est in Triangulo AEC rectangulo, per citatum theorema, latus AE quadrante minus est. Itaque AE latus, commune utrique Triangulo AEB , & AEC , est quadrante majus & minus; quod absurdum est. Consequitur igitur perpendicularem cadere intra Triangulum datum.

Esto verò AEB triangulum, obtusangulum ad B : acutangulum ad E . Dico AD perpendicularem cadere extra Triangulum, in latus EB continuatum. Secus si non: vel lateri alterutri coincidit, vel intra cadit. Sed coincidere nequit, quia tunc alteruter angulorum ad B , vel E rectus esset: Intra cadere nequit, quia uterque angulorum ad B , & E , acutus esset, vel obtusus, ex prima parte hujus. Vtrumque est contra thesin. Consequitur igitur, perpendicularem extra Triangulum cadere, si alter angulorum acutus, & reliquus obtusus extiterit: quæ fuerunt demonstranda.

ΠΟΡΙΣΜΑΤΑ quatuor.

Primò itaque in Triangulo obliquangulo datis duobus lateribus

ribus & angulo uni eorum opposito, insuper nota specie anguli alteri dato lateri oppositi, anguli reliqui latusque tertium inveniuntur. Demissus enim ab angulo datis lateribus contento, in oppositum latus (continuatum si oportet) perpendicularis arcus, obliquangulum Triangulum in duo rectangula secat, ex quorum calculo quæsitæ inveniuntur.

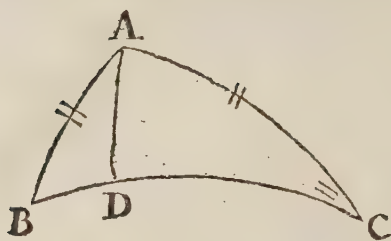


Esto Sphæricum Triangulum ABC obliquangulum: in quo dentur latera, AC part. 50, AB part. 26 22' 20", & angulus ad C part. 30, cum specie anguli ad B acuta; dabuntur anguli ad A & B, cum tertio latere BC. Descendat enim perpendicularis AD in latus BC, qui intra Triangulum cadit, propter utrumque

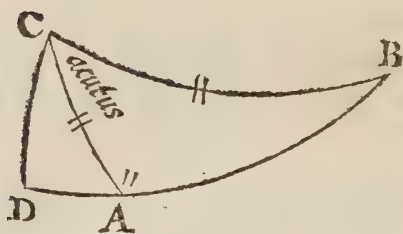
angulum ad B & C acutum; fiuntque rectangula Triangula duo, ADC & ADB, daturque in Triangulo ADC basis AC part. 50, & angulus ad C part. 30. Itaque per primum porisma duodecimi hujus, AD est part. 22 31' 15": quadrante circuli minus, per 9 hujus, quia oppositus angulus acutus est.

Iam si queratur angulus ad B, dabitur adminiculo perpendicularis AD inventi. Nam in Triangulo ADB rectangulo, datur basis AB part. 26 22' 20", & latus AD part. 22 31' 15". Itaque per 2 porisma 12 hujus, angulus ad B est part. 59 34' 21" acutus per 9 hujus, quia oppositum latus quadrante minus est.

Eodem modo definitur angulus ad A. Nam in Triangulo ADB datur basis AB part. 26 22' 20", & latus AD part. 22 31' 15". Itaque per 6 porisma 13 hujus, angulus BAD est part. 33 14' 53", acutus. Nam quia basis AB est minor quadrante, utrumque latus AD & BD, quadrante minus est, aut majus. Sed AD latus minus est quadrante, itaque & BD. Quare per 9 hujus, angulus ad A oppositus acutus est. Rursus in Triangulo rectangulo ADC, datur basis AC part. 50, & angulus ad C part. 30, & latus AD part. 22 31' 15"; Itaque per 7 porisma 12, vel per 6, aut 7 decimitertii (plura enim hic data sunt) angulus DAC est part. 69 38' 20", acutus, quia basis & latus quadrante minor est. Anguli verò BAD, & CAD æquales sunt angulo BAC, ergo angulus BAC est part. 102 53' 13".



Quin & latus BC eadem methode investigatur. In Triangulo enim rectangulo BAD datur basis AB part. 26 22' 20'', & latus AD part. 22 31' 15''. Quare per 4 porisma duodecimi hujus, BD est part. 14 5' 44'', quadrante minor per 10 hujus, quia basis cum dato latere sigillatim quadrante minores sunt. Præterea in Triangulo rectangulo ADC datur basis AC part. 50, angulus ad C partium 30, cum latere AD part. 22 31' 15''. Quare per 4 porisma 12 hujus, vel per 2 aut 4 decimitertii, latus DC est part. 45 54' 16'', quadrante minus, quia basis & latus datum quadrante minus est. Iam cum BD sit part. 14 5' 44''; & DC part. 45 54' 16'', latus BDC, utriusque summa est part. 60.



Et sic quidem propositi Trianguli postulata innotescunt, perpendiculari intra Triangulum cadente: Diversa autem parum est ratio, perpendiculari cadente extra. Est enim obliquangulum Triangulum ABC, in quo detur AC latus part. 26 22' 20'', BC partium 60, & angulus ad B part. 102 53' 13'', cum specie anguli ad C acuta: Invenientur reliqui anguli ad C & B, cum latere tertio AB. Emissa enim perpendiculari arcu CD, ex angulari puncto datorum laterum C, cadente extra, propter angulos ad A & C specie diversos, sunt ut supra duo Triangula rectangula ADC & BDC, ex quorum calculo quæsitæ inveniuntur. In Triangulo enim ADC datur basis AC part. 26 22' 20'', cum angulo ad A part. 77 6' 47'', reliquo scilicet ipsius BAC ad semicirculum; itaque CD perpendicularis per primum porisma 12 hujus est part. 25 39' 32''.

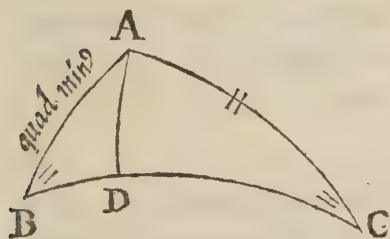
Secundo, in Triangulo BDC rectangulo datur basis BC part. 60, & latus CD part. 25 39' 32''; Itaque per secundum porisma 12 hujus, angulus ad B est part. 30.

Tertio, in eodem Triangulo rectangulo BDC, datur basis BC part. 60, cum latere CD part. 25 39' 32'', ergo per 6 porisma 13 hujus, angulus BCD est part. 73 53' 52''. Item in Triangulo rectangulo ADC, datur basis AC part. 26 22' 20'', cum latere CD part. 25 39' 32''; ergo

ergo per idem porisma angulus ACD est part. 14 19' 31". Ablato vero angulo ACD ex angulo BCD , relinquitur angulus ACB partium 59 34' 21".

Postremo, in Triangulo rectangulo $BD.C$, datur basis BC part. 60, cum angulo ad C part. 73 53' 52", ergo per primum porisma 12 hujus, latus angulo dato oppositum BD est part. 56 18' 35". Item in Triangulo rectangulo ADC datur basis AC part. 26 22' 20", cum angulo ad C part. 14 19' 31", ergo per idem porisma, latus AD angulo C oppositum est part. 6 18' 35". Aufer autem AD ex BD , & relinquitur latus AB part. 50. Quæ fuerunt investiganda.

Secundo, datis duobus angulis, & latere uni eorum opposito, patefcunt reliqua latera, & angulus tertius, si modo constiterit utrum latus ignotum dato angulo oppositum, quadrante majus fuerit an minus. Perpendicularis enim arcus eductus à termino lateris dati, in latus utrique angulo dato adjacens, (continuatum si oportet) obliquangulum in duo Triangula rectangula dividit, unde postulata innotescunt.

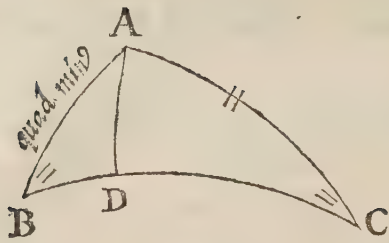


Detur ABC triangulum non rectangulum, & in eo latus AC part. 50, cum angulis, ad C quidem part. 30, sed ad B part. 59 34' 21": sitque AB latus ignotum quadrante minus. Innotescunt hinc reliqua latera AB & DC , cum angulo tertio ad A .

Primum enim in Triangulo rectangulo ADC datur basis AC part. 50, cum ang. ad C partium 30. Ergo per primum porisma 12 hujus perpendicularis AD est part. 22 31' 15": caditque intra Triangulum, quia B & C anguli dati sunt acuti.

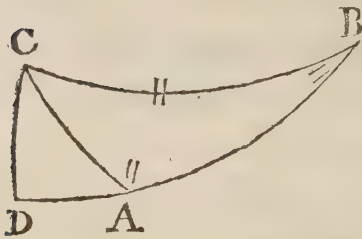
Secundo, in Triangulo rectangulo ADB datur latus AD part. 22 31' 15", cum opposito angulo B part. 59 34' 21"; itaque basis AB , per 3 porisma 12 hujus, est part. 26 22' 20", quadrante minor ex thesi.

Tertio, in Triangulo ADB rectangulo, ex latere AD part. 22 31' 15", & angulo B part. 59 34' 21", datur latus BD per idem porisma partium 14 5' 44", quadrante minus, propter AB basin quadrante minorem. Item in Triangulo ADC rectangulo, ex latere AD part. 22 31' 15", & ang.



Et ang. C part. 30 (vel ex aliis, quia plura data sunt) datur latus DC part. 45 54' 16". Summa vero laterum BD & DC, part. 60, æquatur lateri BC.

Postremo, in Triangulo rectangulo ADC, propter datam basim AC, cum latere DC, & angulo C, invenitur angulus DAC partium 69 38' 20". Item in Triangulo rectangulo ADB, ex data basi AB, & latere BD, cum angulo B, patescit multis modis ang. BAD part. 33 14' 53". Summa vero angulorum DAC & BAD, æqualis est angulo BAC tertio, part. 102 53' 13".



Et sic postulata porismatis nostri investigata sunt, perpendiculari arcu cadente intra Triangulum. Similis fere est ratio si cadat extra. Detur enim in appposito Triangulo ABC obliquangulo, angulus ad A part. 102 53' 13", ad B part. 30, cum latere BC part. 60; innotescant hinc reliqua latera & angulus tertius.

Primum enim, quia perpendicularis CD cadit extra, dantur in Triangulo rectangulo BDC, basis BC partium 60, cum angulo C part. 30. Quare per primum porisma 12 huius, perpendicularis CD est partium 25 39' 32".

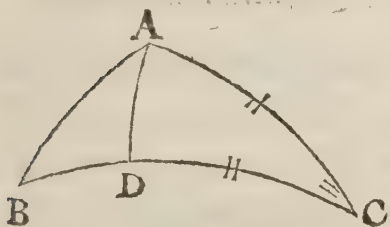
Secundo, in Triangulo rectangulo ACD, datur perpendicularis CD part. 25 39' 32", cum angulo ad A, residuo scilicet ipsius BAC ad semicirculum part. 77 6' 47"; Ergo per secundum porisma 13 huius, angulus ACD est part. 14 19' 31". Item in Triangulo rectangulo BCD, datur perpendicularis CD part. 25 39' 32", & angulus ad B part. 30. Ergo per idem porisma, vel per alia quia plura data sunt, angulus BCD est part. 73 53' 52". Aufer autem angulum ACD ex angulo BCD, & reliquus erit angulus tertius ACB part. 59 34' 21".

Tertio, in Triangulo rectangulo ADC, ex dato utroque angulo C & A cum latere CD, datur reliquum latus DA part. 6 18' 35". Item in Triangulo rectangulo BDC, ex dato utroque angulo B & C, etiam latere CD, & basi BC, multis modis manifestatur latus BD part. 56 18' 35". Tolle autem latus DA part. 6 18' 35", ex latere BD part. 56 18' 35", & remanebit latus AB part. 50.

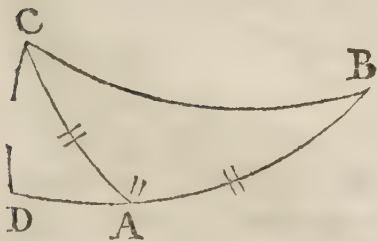
Postre-

Postremo, in Triangulo rectangulo ADC ex dato utroque angulo C & A , atque etiam utroque latere CD & AD , variis modis patescit basis AC part. $26\ 22'\ 20''$; Quæ fuerunt investiganda.

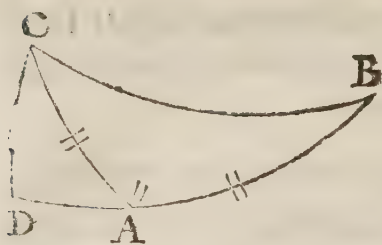
Tertio, datis duobus lateribus, & angulo ab iis comprehenso, tertium latus, & anguli reliqui innotescunt. Perpendicularis enim arcus, à termino lateris alterutrius dati, in reliquum datum (si necesse sit productum) emissus, obliquangulum triangulum in duo rectangula partitur, ex quorum calculo ignota manifestantur.



Esto obliquangulum Triangulum ABC , in quo dentur latera AC part. 50 , BC part. 60 , cum angulo ad C ab iis comprehenso part. 30 . Perpendicularis AD ut supra invenitur part. $22\ 31'\ 15''$, caditque intra Triangulum, ut calculus docebit. Latus enim CD in Triangulo rectangulo ADC , invenitur per 4 porisma 12 hujus, vel per alia, quia plura data sunt, part. $45\ 54'\ 16''$, minus latere BC part. 60 . Itaque BD est part. $14\ 5'\ 44''$, & perpendicularis AD intra Triangulum cadit. Porro ex lateribus AD & BD in Triangulo rectangulo ADB cognitis, invenitur basis AB , per 5 porisma duodecimi hujus, part. $26\ 22'\ 20''$: Item angulus ad B , per tertium porisma decimitertii hujus, vel per alia, quia plura data sunt, partium $59\ 34'\ 21''$. Postremo, angulus BAD in eodem Triangulo ADB , invenitur part. $33\ 14'\ 53''$; & angulus DAC in Triangulo ADC part. $69\ 38'\ 20''$. Ergo angulus BAC utriusque summa est part. $102\ 53'\ 13''$.



Dentur vero in Triangulo obliquangulo ABC apposito latera, AB partium 50 , AC part. $26\ 22'\ 20''$, cum angulo A incluso part. $102\ 53'\ 13''$; perpendicularis DC erit part. $25\ 39'\ 32''$, ut supra, quadrante minor. Nam angulus CAD est acutus, residuus sc. CAB obtusi, & basis AC est minor quadrante. Itaque perpendicularis arcus CD cadit extra. Dantur autem in Triangulo ADC rectangulo latus CD

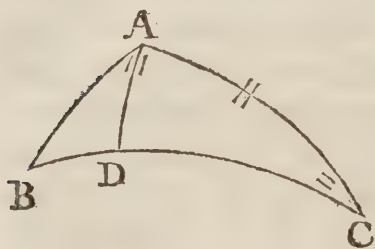


part. 25 39' 32'', & angulus ad A part. 77 6' 47'', reliquus, sci. anguli CAB, ad semicirculum: ergo latus DA est part. 6 18' 35''. AB vero est part. 50: totus igitur arcus DAB est part. 56 18' 35''.

Secundo, in Triangulo BDC rectangulo dantur latera, CD part. 25 39' 32'', & DB part. 56 18' 35'', ergo basis BC invenitur part. 60, angulus ad C part. 30, & angulus BCD part. 73 53' 52''.

Tandem in Triangulo ADC rectangulo, reperitur angulus ACD partium 14 19' 31'', qui subductus ex angulo BCD part. 73 53' 52'', relinquit angulum ACB part. 59 34' 21''. Quæ fuerunt indaganda.

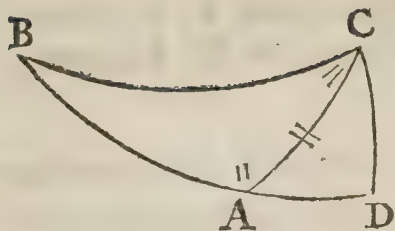
Postremo datis duobus angulis, una cum latere utrique adiacente, reliqua latera, & angulus tertius investigantur. Perpendicularis enim arcus ab angulo alterutro in oppositum latus (continuatum si oportet) egrediens, obliquangulum Triangulum in duo rectangula secatur, ex quorum calculo quæsitæ dantur.



Esto Triangulum ABC non rectangulum, sitque angulus ad A part. 102 53' 13'', ad C part. 30, & latus AC part. 50. Erit AD part. 22 31' 15'', latus scilicet Trianguli rectanguli ADC: & angulus CAD part. 69 38' 20'', minor angulo BAC dato; ergo reliquus BAD est partium 33 14' 53'', & proinde perpendicularis

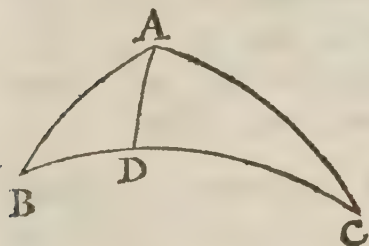
intra Triangulum cadit. Hinc in Triangulo ADB invenitur latus AB (ex dato latere AD, cum angulo ad A) part. 26 22' 20'': item angulus tertius ad B part. 59 34' 21'', cum latere BD, part. 14 5' 44''. Latus vero DC invenitur in Triangulo ADC, part. 45 54' 16''. Ergo totum latus BDC est part. 60.

Sit verò angulus ad A in Triangulo appposito ABC part. 102 53' 13'', ad C part. 59 34' 21'', & latus AC part. 26 22' 20'': invenietur CD perpendicularis part. 25 39' 32'', quadrante minor; ergo angulus ad B, in Triangulo rectangulo BDC, per 9 huius acutus est, & perpendicularis cadit extra; anguli enim ad A & B specie diversi sunt. Hinc reperiuntur,



tur, primū in Triangulo ADC, latus DA part. 6 18' 35'', & in Triangulo CDB, latus DB part. 56 18' 35''. Aufer autem DA ex DB, & reliquum erit latus AB part. 50. Adhæc in eodem triangulo CDB, invenitur angulus tertius ad B part. 30, & latus BC part. 60. Quæ fuerunt indaganda.

16. In obliquangulo Triangulo sinus angulorum finibus oppositorum laterum directe proportionales sunt.



Esto ut supra obliquangulum Triangulum ABC, sectum per AD perpendicularem, in duo Triangula rectangula ADC & ADB; dico sinum anguli B esse ad sinum lateris oppositi AC, ut sinus anguli C ad sinum oppositi lateris AB. Nam per 7 porisma 12 hujus est,

Vt sinus ang. B, ad sinū lateris AD, ita sinus ang. D, ad sinū lat. AB.

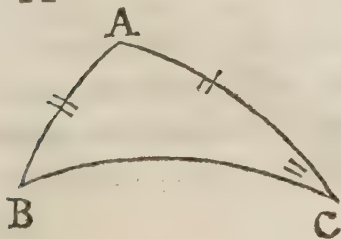
Item ut sinus ang. C ad sinum lateris AD, ita sinus ang. D, ad sinum lateris AC.

Atqui per 19 Septimi Euclidis, factus à sinu AD in sinum ang. D æquatur factus à sinu B in sinum AB, & factus à sinu C in sinum AC. Itaque per eandem,

Vt sinus ang. B ad sinum oppositi lateris AC, ita sinus ang. C ad sinum oppositi lateris AB. Eademque est ratio in reliquo angulo A, & opposito latere BC. Quod erat demonstrandum.

ΠΟΡΙΣΜΑΤΑ duo.

Primum igitur datis duobus lateribus, cum angulo uni datorum laterum opposito, manifestatur angulus, alteri datorum laterum oppositus. Est enim ut sinus lateris dati ad sinum anguli oppositi; ita sinus lateris alterius dati, ad sinum anguli oppositi.



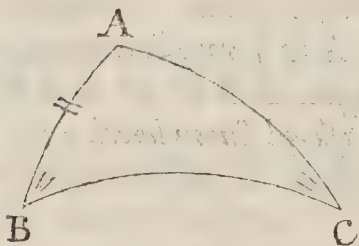
In exemplo dentur in obliquangulo Triangulo ABC appposito duo latera, AB part. 26 22' 20'', AC part. 50, cum angulo ad C partium 30. Invenietur angulus ad B partium 59 34' 21''. Nam

V 2

Vt

*Vt sinus lateris AB 4442009 ad sinum anguli oppositi C 5000000 ;
 ita sinus lateris BC 7660445 ad sinum anguli oppositi D 8622725 ,
 partium 59 34' 21".*

Secundo, datis duobus angulis, cum latere uni datorum angulorum opposito, invenitur latus alteri datorum angulorum oppositus. Nam ut sinus anguli dati ad sinum lateris oppositi, ita sinus alterius anguli dati, ad sinum lateris oppositi.

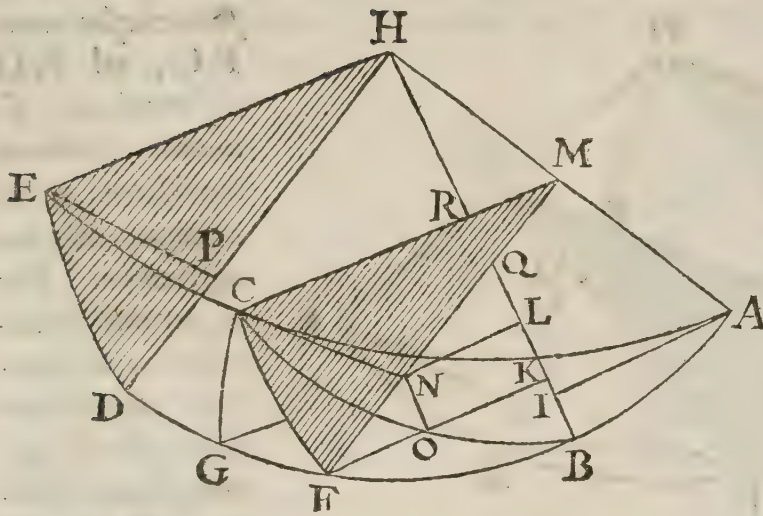


Exempli causa, dentur in Triangulo obliquangulo ABC duo anguli, unus ad C partium 30, alter ad B part. 59 34' 21", cum latere AB part. 26 22' 20": Invenietur AC latus part. 50. Nam

Vt sinus anguli C 5000000, ad sinum AB lateris oppositi 4442009: Ita sinus anguli B 8622725, ad sinum AC lateris oppositi 7660445 part. 50, ut supra.

17. In obliquangulo triangulo, quadratum radii est ad planum sinuum rectorum laterum duorum, ut sinus versus anguli ab iisdem comprehensi, ad differentiam sinuum versorum tertii lateris, & reliquorum laterum differentia. Quadratum autem radii est ad planum sinuum rectorum angulorum duorum, ut sinus versus lateris, utrique angulo adjacentis, ad differentiam sinuum versorum tertii anguli, & differentia datorum angulorum unius, & alterius ad semicirculum complementi.

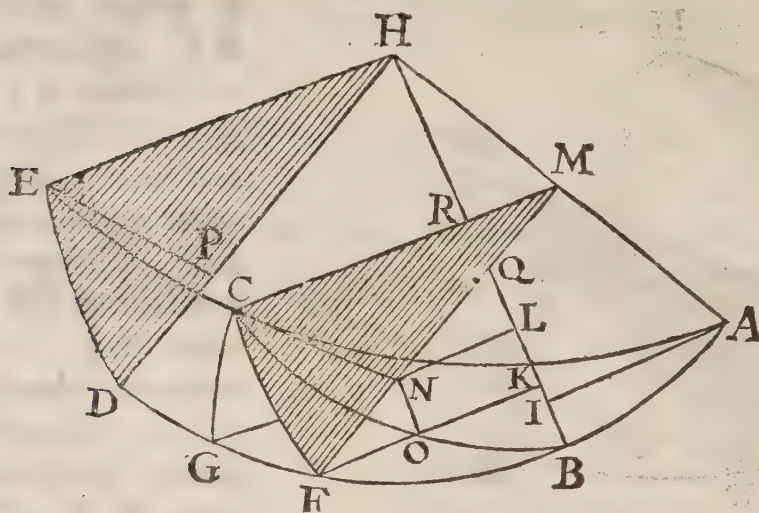
Hoc Theorema verum est in omni Triangulo, tum rectangulo, tum obliquangulo, verum quia usus ejus potissimum est in Triangulis obliquangulis, ideo hic de obliquangulis κατ' ἐξοχὴν enumeratur. Sit igitur Sphaericum Triangulum ABC obliquangulum, cujus latera AB & AC inaequalia, & sigillatim quadrante circuli minora, producantur in E & D, ut ACE & ABD quadrantes sint maximorum circulorum. Facto verò A polo, describatur arcus DE intervallo AD; & arcus CF intervallo AF; erit tunc arcus DE per 8 hujus mensura anguli ad A; arcus verò AF aequalis erit arcui AC. Item polo B, & distantia BC describatur arcus CG, qui æqualis



lis erit arcui BC ;
 & proinde arcus
 BF differentia
 erit laterum AC
 & AB , & ar-
 cus GF diffe-
 rentia tertii lateris
 BC , & reliquo-
 rum laterum diffe-
 rentiæ BF . E-
 mittantur deinde
 ex H communi
 centro quadran-
 tum AD &
 AF , semidiamete-

tri HA, HB, & HD, in puncta A, B, D; & à terminis arcuum AB, BF, & BG, demittantur perpendiculares AI, FK, & GL, in semidiametrum HB; erunt hæc arcuum dictorum recti sinus, per 7 primi hujus; BI autem, BK, & BL, versi sinus eorundem per 10 ejusdem: & proinde KL differentia sinuum versorum lateris BC vel BG, & reliquorum laterum differentia BF. Præterea à termino arcus AF descendat perpendicularis FM in semidiametrum HA, erit hæc sinus rectus lateris AF. Vbi autem GL & FM sese interfecant sit N punctum, ex quo ducatur NO parallela HB; adeoque per 34 primi elementorum æqualis ipsi KL. Adhæc à termino arcus DE, demittatur perpendicularis EP in semidiametrum HD, erit hæc sinus rectus arcus DE; & DP sinus versus ejusdem. Postremo à C communi termino arcuum FC & GC ducatur recta CN in N, sectionem rectarum GL & FM; erit hæc normalis rectis GN & FN. Arcus enim FC & GC per 5 hujus normales sunt quadranti ABD, transenti per A & B polos eorundem. Itaque communis eorum sectio, quæ per 3 undecimi Euclidis est recta linea, nempe CN, est plano quadrantis ABD normalis, per 19 ejusdem. Transit autem sectio communis arcuum dictorum per N punctum, ex conversione definitionis lineæ perpendiculariter super planum erectæ. Quare CN est sinus rectus arcus FC, & FN sinus versus ejusdem.

His verò in hunc modum expeditis, dico DH radium esse ad FM sinum rectum lateris AC, ut DP sinus versus anguli ad A, ad FN, sinum versus arcus FC. Item HA radium esse ad AI, sinum rectum lateris



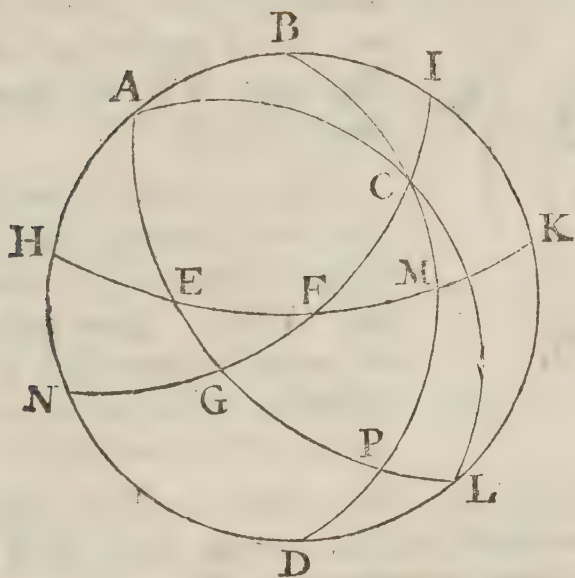
AB, ut FN
sinus versus arcus
FC, ad NO
differentiam si-
nuum versorum
tertii lateris, & re-
liquorum laterum
differentie. Hoc
est, per multiplica-
tionem termino-
rum, quadratum
radii esse ad pla-
num sinuum recto-
rum FM &
AI, ut DP si-

nus versus anguli ad A ab iisdem lateribus comprehensi, ad NO differentiam
sinuum versorum tertii lateris, & reliquorum laterum differentie. Triangula
enim HEP, & MCN sunt æquiangula, ob rectos angulos ad P & N,
æqualem ad H & M, inclinationis scilicet angulum quadrantis ACE, ad
quadrantem AFD. Itaque per 4 Sexti Euclidis, latera habent proportiona-
lia. Quare ut EH ad CM, ita PH ad NM. Et quia DH ex fa-
brica æquatur ipsi DH, & FM ipsi CM, DH est ad FM, ut
PH ad NM: adeoque per 5 Quinti Euclidis, ut DH ad FM, ita
DP ad FN. Secundo Triangula FON & FKO & HMQ
sunt æquiangula, ob rectos angulos ad O & K, communem ad F. Item
triangula HMQ & HAI sunt æquiangula, ob rectos angulos ad M & I,
communem ad H; itaque per 4 Sexti elementorum HA est ad AI, ut
FN ad NO. Quod erat demonstrandum.

Ita verò patet veritas primæ partis Theorematis huius. Etsi enim Triangu-
lum propositum, laterum sit quadrante circuli minorum, valet tamen superior ra-
tiorcinatio in Triangulis, quorum latera comprehendunt angulum, vel quadrante
circuli maiora sunt, vel unum majus, alterum minus. Nam ex 7 primi hu-
jus, sinus rectus duabus peripheriis communis est, uni, circuli quadrante minori;
alteri, quadrante circuli maiori. Imo si latera æqualia dentur, non absimilis est
argumentandi forma, nisi quod NO tunc sit tertii lateris sinus versus.

Secunda porro pars Theorematis, quam jure Nobis vendicamus, quod à No-
bis primum inventa sit, eodem modo demonstratur quo prima, si prius novum de-
scribatur Triangulum, per polos laterum Trianguli dati. Hujus enim latera an-
gulis,

gulis, & anguli lateribus primi Trianguli ita respondent, ut in secunda parte Theorematis eadem ferè ratione argumentari liceat, quàm in prima, sicuti ex sequentibus evadet manifestum.

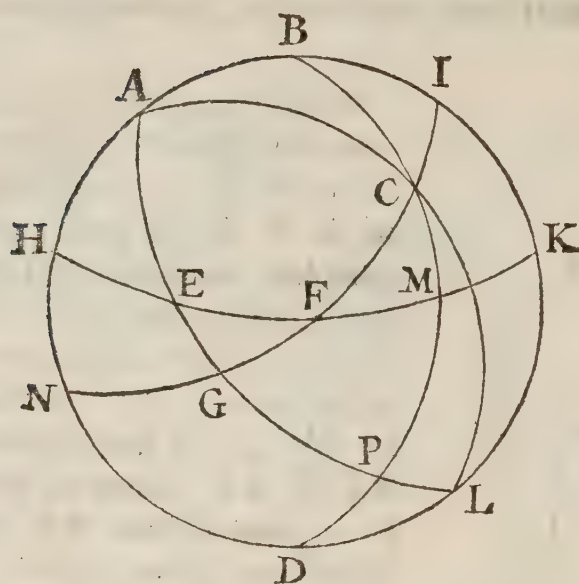


Sit enim Triangulum ABC idem quod supra, obtusangulum scilicet ad B, acutangulum ad A & C; & producatur ipsius latus minimum AB ex polo F in circulum AKDA: reliqua vero latera producantur in semicirculos, AC quidem ex polo G in semicirculum ACL, BC autem ex polo E in semicirculum BCD. Describatur quoque ex polo A semicirculus NFI transiens per polos G & F; & ex polo B semicirculus HFK, transiens per polos E & F; tandemque ex polo C semicir-

culus AGL, transiens per polos E & G; habebimus tunc novum Triangulum Sphericum EFG, cujus tria latera respondebunt tribus angulis Trianguli ABC; & hujus tria latera respondebunt tribus angulis Trianguli EGF. Nam quod ad latera Trianguli EGF attinet, primum latus EF æquale est residuo anguli ABC ad semicirculum. Nam E est polus semicirculi BMD, & F est polus semicirculi BKD, & proinde EM & FK sunt circuli quadrantes. Ablato igitur communi medio FM, relinquuntur arcus EF & MK æquales. Atqui MK subtendit angulum MBK per 8 hujus, hoc est residuum anguli ABC ad semicirculum. Itaque latus EF est æquale residuo anguli ABC ad semicirculum.

Secundo, latus GF æquatur angulo BAC. Nam F est polus semicirculi BKD, & G est polus semicirculi ACL: ideoque GC & FI sunt circuli quadrantes. Remoto igitur communi medio FC, remanent arcus GF & CI æquales. Sed CI est mensura anguli BAC, per 8 hujus. Ergo latus GF est æquale angulo BAC.

Tertio, latus GE est æquale angulo ACB. Nam G est polus semicirculi ACL, & E est polus semicirculi BMD: itaque EP & GL sunt



sunt circuli quadrantes. Demp-
to igitur communi medio GP,
reliqui arcus EG & PL æ-
quantur. Sed PL metitur an-
gulum ad C per octavum hu-
jus, hoc est angulum ACB.
Ergo latus GE est æquale
angulo ACB.

Atque ita demonstratum est
tria latera Trianguli EFG
respondere tribus angulis trian-
guli ABC. Quod autem
tres anguli trianguli EFG,
respondeant tribus lateribus tri-
anguli ABC ita ostenditur.

Primò, angulus EFG æqualis est lateri AB. Nam A est polus semi-
circuli NFI, & B est polus semicirculi HFK. Itaque BK & AI
sunt circuli quadrantes. Quare ablato communi medio BI, residui arcus
BK & AI sunt æquales. Atqui IK mensurat per 8 hujus angulum
IFK, id est angulum EFG. Quare angulus EFG est æqualis late-
ri AB.

Secundo, angulus FEG est æqualis lateri BC. Nam B est polus se-
micirculi HFK, & C est polus semicirculi AGL. Quare DM &
PC sunt quadrantes circuli; à quibus remoto communi medio CM, resi-
dui arcus PM & BC æquantur. At verò PM per 8 hujus est men-
sura anguli PEM, id est anguli FEG. Quamobrem angulus FEG
est æqualis lateri BC.

Tertio, angulus EGF est æqualis complemento lateris AC. Nam B est
polus semicirculi HFK, & C est polus semicirculi AGL. Itaque BG
& CG sunt circuli quadrantes. Arcus autem AC, per 8 hujus metitur
angulum AGC, id est EGF. Ergo angulus EGF æqualis est comple-
mento lateris AC. Nam quia EF non metitur angulum ABC, sed resi-
duum ad semicirculum MBK, idcirco etiam angulus G oppositus lateri
EF non metitur latus AC, sed ipsius complementum ad semicirculum CL.

Apparet autem ex hac demonstratione veritas secundæ partis Theorematis
nostri. Nam quia latera & anguli secundi Trianguli EFG respondent an-
gulis & lateribus Trianguli primi ABC, eo modo quo ante demonstravimus,
sequi-

sequitur sane ex eo, eandem esse proportionem laterum & angulorum in triangulo secundo, quæ supra demonstrata est in primo. Sunt ergo termini proportionales in primo Triangulo isti

Primò, secundum demonstrationem primæ partis Theorematis.

⁸ D H radius	⁶ F M sinus rectus lateris A C	⁴ D P sinus versus anguli dati	³ F N quartus
⁸ A H radius	⁴ A I sinus rectus lateris A B	³ F N quartus	^{1 ½} N O differentia sinuum versorum tertii lateris &c.

Secundò, per multiplicationem terminorum.

⁶⁴ Quadratum radii D H vel A H	²⁴ Plenum sinuum recto- rum F M & A I	⁴ D P sinus versus anguli dati.	^{1 ½} N O differentia sinuum versorum tertii lateris &c.
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Tertiò, per terminorum transpositionem.

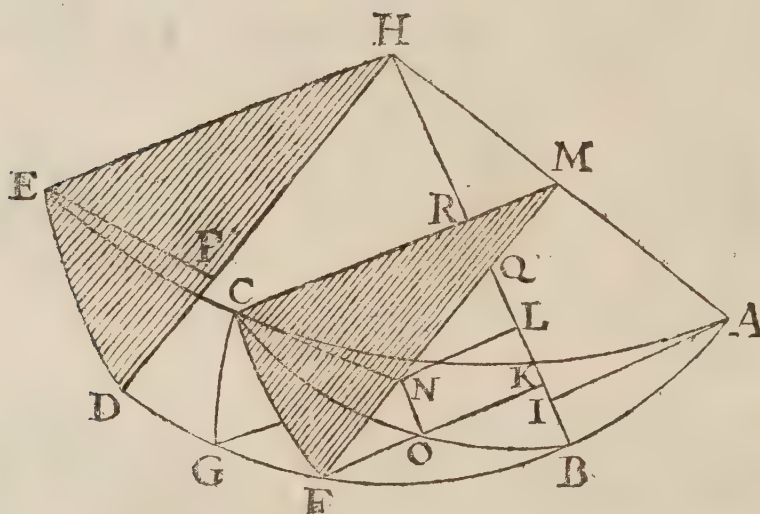
⁸ A H radius	⁶ F M sinus rectus lateris A C	⁴ A I sinus rectus lateris A B	³ F N quartus
⁸ D H radius	³ F N quartus	⁴ D P sinus versus anguli dati.	^{1 ½} N O differen- tia sinuum &c.

Tot modis licet variare proportionum terminos, in prima Theorematis parte. Verum quia tertius modus & facilior est, & ad usum maximè accommodatus, ideo eum cæteris prætulimus, & in sequentibus porismatibus usurpavimus.

Π Ο Ρ Ι Σ Μ Α Τ Α quatuor.

Primum itaque in obliquangulo triangulo, datis duobus lateribus & angulo ab iis comprehenso, investigatur latus tertium. Radius enim est ad sinum rectum lateris unius dati, ut sinus rectus lateris alterius dati ad quartum. Item Radius est

ad quartum, ut sinus versus anguli dati ad differentiam sinuum versorum tertii lateris, & reliquorum laterum differentiæ. Hæc igitur differentia ad sinum versum differentiæ laterum adjecta, componit sinum versum lateris quæsitum.



Repetatur penultima nostra diagrapha, & assumatur ut supra Triangulum obliquangulum Sphæricum ABC, in quo dentur duo latera AB & AC, cum angulo ad A ab iis comprehenso. Sitque AB part. 50, & ejus sinus rectus AI

7660445; AC partium 60, & ejus sinus rectus FM 8660254: A angulus ab iis comprehensus part. 30, & sinus ejus versus 1339746, denique sinus versus differentiæ datorum laterum (nempe part. 10) sit 151922. Propositum est ex his invenire tertium latus BC, dato angulo A oppositum. Est igitur per præsens porisma,

ut	AH	ad	FM,	ita	AI	ad	FN
	10000000		8660254		7660445		6634139.
Item ut	DH	ad	FN,	ita	DP	ad	NO vel LK.
	10000000		6634139		1339746		888806, dif-

ferentiam sinuum versorum tertii lateris, & reliquorum laterum differentiæ. Adjiciatur igitur hæc differentia LK ad KB differentiam sinuum versorum datorum laterum 151922, & componetur BL sinus versus lateris tertii quæsitum 1040728. Hujus arcus BC datur ex Canone Sinuum, part. 26 22' 20". Ausfer enim BL 1040728, ex radio 10000000, & reliquus erit sinus rectus arcus complementi BC 8959272, part. 63 37' 40". Ergo hujus complementum part. 26 22' 20", debetur sinui verso BL, per 8. primi hujus, idemque est sinus versus tertii lateris quæsitum.

Secundo

Secundo, datis tribus lateribus, invenitur angulus cuivis lateri oppositus. Nam Radius est ad finum rectum lateris unius quæsito angulo adjacentis, ut finus rectus alterius lateris quæsito angulo adjacentis, ad quartum. At quartus est ad radium, ut differentia finuum versorum tertii lateris & reliquorum laterum differentia, ad finum versum anguli quæsitum.

Manente & hic superiore Trianguli nostri schemate, detur AB latus part. 50, ejusque rectus sinus 7660445; AC part. 60, & rectus ejus sinus 8660254, BC part. 26 22' 20'', cum NO 888806, differentia finuum versorum tertii lateris BC (1040728) & KB reliquorum laterum differentia (part. 10, 151922) invenietur angulus ad A part. 30. Nam

ut	AH	ad	FM,	ita	AI	ad	FN
	10000000		8660254,		7660445		6634139
Sed ut	FN	ad	DH,	ita	NO	ad	DE
	6634139		10000000,		888806		1339746, sinu

versum anguli ad C part. 30, omnino ut supra.

Tertio, datis duobus angulis, & latere utrique adjacentem invenitur angulus tertius. Nam radius est ad finum rectum anguli unius dati, ut finus rectus alterius anguli dati ad quartum. Item radius est ad quartum, ut finus versus lateris dati ad differentiam finuum versorum tertii anguli, & differentia anguli unius dati, & alterius ad semicirculum residui. Hæc ergo differentia ad finum versum differentia anguli unius dati, & alterius ad semicirculum residui adjecta, componit finum versum anguli quæsitum.

Exempli gratia, dentur in Triangulo ABC præmisso, duo anguli A & B, cum interjecto latere AB: sitque angulus ad A part. 30, & sinus ejus rectus 5000000; angulus ad B part. 102 53' 13''; & sinus ejus rectus 9748131; latus AB part. 50, ejusque sinus versus 3572124; denique differentia angulorum datorum unius, & alterius ad semicirculum residui part. 47 6' 47'', & ipsius sinus versus 3194423. Invenitur ex his, tertius angulus ad C part. 59 34' 20''. Nam

ut	10000000	ad	9748131,	ita	5000000	ad	4874065
	Radius		sinum rect. ang. B.		sinus rect. ang. A		Quartum
Item ut	10000000	ad	4874065,	ita	3572124	ad	1741076
	Radius		quartum		sinus vers. lat. AB		

rentiam sinuum versorum anguli tertii, & differentie anguli unius dati, & reliqui ad semicirculum residui.

Hæc igitur differentia addita ad sinum versum differentie anguli unius dati, & alterius ad semicirculum complementi 3194423, componit sinum versum anguli ad C, 4935499 part. 59 34' 21'', non aliter quam supra inventus est.

Postremo, datis tribus angulis, manifestatur latus cuicunque angulo oppositum. Nam radius est ad sinum rectum anguli unius quæsito lateri adjacentis, ut sinus rectus anguli alterius quæsito lateri adjacentis ad quartum. Sed quartus est ad radium, ut differentia sinuum versorum tertii anguli, & datorum angulorum unius, & alterius ad semicirculum residui, ad sinum versum lateris quæsiti.

Resumatur Triangulum ABC sphericum superius, denturque in illo tres anguli, A partium 30, & sinus ejus rectus 5000000; B part. 102 53' 13'', ejusque sinus rectus 9748131; C part. 59 34' 21'': & proinde differentia anguli A, & complementi anguli B ad semicirculum partium 47 6' 47'', & sinus illius versus 1741072. Queritur ex his latus AB oppositum angulo C. Invenitur part. 50. Nam

ut 10000000	ad 9748131	ita 5000000,	ad 4874065.
Radius.	sinum rect. ang. B	sinus rect. ang. A	Quartum

Sed ut 4874065	ad 10000000	ita 1741072	ad 3572124.
Quartus	Radium	differ. sin. versor. &c.	sinum ver-

sum AB lateris quæsiti part. 50, omnino ut supra.

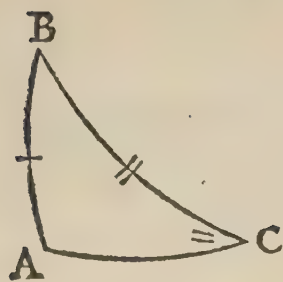
Hucusque Sphericorum Triangulorum calculum explicuimus; & ita, ut quæ speciatim ab aliis, & prolixè valde proposita sunt, commodius, faciliusque hinc investigentur. Tuum erit, lector, his uti, quippe ad usum accommodatis, ad quem studia nostra omnia referri oportet. Quod si quædam concisa nimis, obscuraque videantur, tenendum est hoc doctrinæ genus attentionem, & indefessum studium requirere, etiam quum perspicue proponitur. Subjicimus verò & hic superioris doctrinæ summam in Tabula, ut prompte unumquodque postulatam investigari possit.

In Triangulo rectangulo

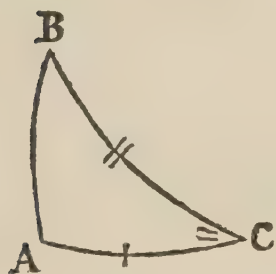
invenitur

LATVS,

Ex basi, & angulo quæfito lateri opposito,
per primum porisma 12 hujus.

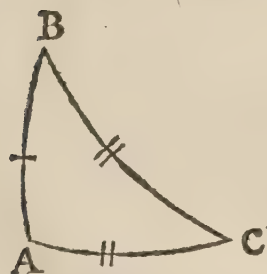


^I ut radius	^{II} ad sinum basis	^{III} ita sinus ang.	^{IIII} ad sinum lat. oppos.
ut radius	ad secant. comp. basis	ita sec. compl. ang.	ad sec. comp. lat. opp.
ut sinus basis	ad radium	ita sec. compl. ang.	ad sec. comp. lat. opp.
ut sec. comp. bas.	ad radium	ita sinus ang.	ad sin. lat. oppositi.



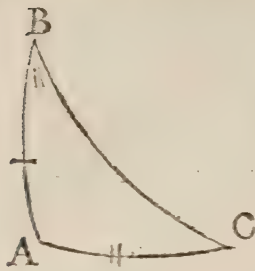
Ex basi, & angulo adjacentè lateri quæ-
fito, per quartum porisma
13 hujus.

^I ut radius	^{II} ad sinum comp. ang.	^{III} ita tang. basis	^{IIII} ad tang. lateris
ut radius	ad secant. anguli	ita tang. comp. bas.	ad tang. comp. lat.
ut sin. comp. ang.	ad radium	ita tang. comp. bas.	ad tang. comp. lat.
ut sec. ang.	ad radium	ita tangens basis	ad tang. lateris.



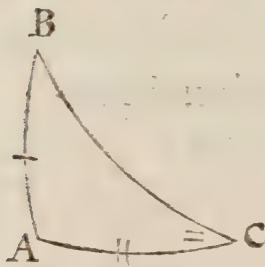
Ex basi, & altero latere, per quartum
porisma 12 hujus.

^I ut radius	^{II} ad sin. compl. lat. dati,	^{III} ita secans basis	^{IIII} ad sec. reliqui lat.
ut radius	ad secantem lat. dati	ita sin. comp. bas.	ad sin. comp. rel. la.
ut sin. comp. lat. dati	ad radium,	ita sin. comp. bas.	ad sin. comp. rel. la.
ut secans lat. dati	ad radium,	ita secans basis	ad sec. reliqui lat.



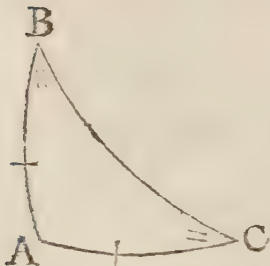
Ex angulo, & latere opposito, si cōstitērit
quadrantene majus sit an minus, per
secundum porisma 13 hujus.

ut radius	^I	ad tang. anguli,	^{II}	ita tang. cōp. lat. dati,	^{III}	ad sec. comp. lat. rel.	^{IIII}
ut radius		ad tang. comp. ang.		ita tang. lat. dati,		ad sin. lat. reliqui.	
ut tang. ang.		ad radium,		ita tang. lat. dati,		ad sin. lat. reliqui.	
ut tang. cōp. ang.		ad radium,		ita tang. cōp. lat. dati		ad sec. comp. lat. rel.	



Ex angulo, & latere adjacente, per pri-
mum porisma 13 hujus.

ut radius	^I	ad sinum lat. dati,	^{II}	ita tang. ang.	^{III}	ad tang. lat. reliq.	^{IIII}
ut radius		ad sec. cōp. lat. dati,		ita tang. comp. ang.		ad tang. cōp. lat. rel.	
ut sinus lateris dati		ad radium,		ita tang. comp. ang.		ad tang. cōp. lat. rel.	
ut sec. comp. lat. dati		ad radium,		ita tang. anguli		ad tang. lat. reliqui.	



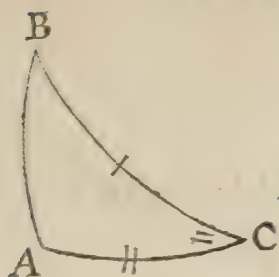
Ex utroque angulo obliquo, per octavum
porisma 12 hujus.

ut radius	^I	ad sinum ang. unius,	^{II}	ita secans ang. alter.	^{III}	ad sec. later. opp.	^{IIII}
ut radius		ad sec. cōp. ang. unius		ita sin. cōp. ang. alt.		ad sin. cōp. lat. opp.	
ut sin. ang. unius		ad radium		ita sin. cōp. ang. alt.		ad sin. cōp. lat. opp.	
ut sec. cōp. ang. uni.		ad radium		ita sec. ang. reliqui		ad sec. lat. oppos.	

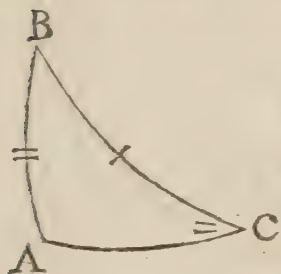
B A S I S

BASIS

Ex latere & angulo adjacente, per quintum
porisma 13 hujus.

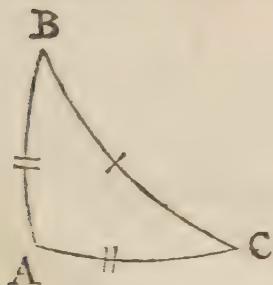


^I ut radius	^{II} ad secant. anguli,	^{III} ita tang. lateris	^{IIII} ad tangent. basis.
ut radius	ad sin. comp. ang.	ita tang. cōp. lat.	ad tang. cōp. basis.
ut sec. anguli	ad radium	ita tang. cōp. lat.	ad tang. cōp. basis.
ut sin. cōp. ang.	ad radium	ita tang. lateris	ad tangent. basis.



Ex latere & angulo opposito; si constiterit
quadrantene major sit, an minor. per
tertium porisma 12 hujus.

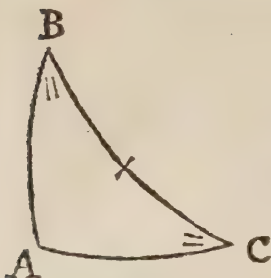
^I ut radius	^{II} ad sec. compl. ang.	^{III} ita sinus lateris	^{IIII} ad sinum basis.
ut radius	ad sinum anguli,	ita sec. comp. lat.	ad secant. comp. bas.
ut sec. cōp. ang.	ad radium	ita sec. comp. lat.	ad secant. comp. bas.
ut sinus anguli	ad radium,	ita sinus lateris	ad sinum basis



Ex utroque latere, per quintum
porisma 12 hujus.

^I ut radius	^{II} ad sec. later. unius,	^{III} ita sec. lat. alter.	^{IIII} ad sec. basis
ut radius	ad sin. cōp. lat. unius.	ita sin. cōp. lat. alt.	ad sinū comp. bas.
ut sec. lateris unius,	ad radium,	ita sin. cōp. lat. alt.	ad sin. comp. bas.
ut sin. cōp. lat. unius	ad radium,	ita secans lat. alt.	ad secantē basis.

Ex utro-



Ex utroque angulo obliquo, per octa-
vum porisma 13 hujus.

^I
ut radius

ut radius

ut tang. ang. unius

ut tang. cōp. ang. uni. ad radium,

^{II}
ad tang. ang. unius,

ad tang. cōp. ang. uni.

ad radium,

ad radium,

^{III}
ita tang. ang. alter.

ita tãg. cōp. ang. alt. ad sin. cōp. bas.

ita tãg. cōp. ang. alt. ad sin. cōp. bas.

ita tang. ang. alter. ad secant. basis.

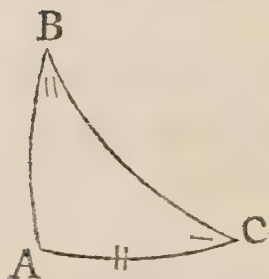
^{IIII}

ad secantē basis

ad sin. cōp. bas.

ad sin. cōp. bas.

ad secant. basis.



ANGVLVS

Ex latere & dato angulo opposito, si spe-
cies quæfiti anguli nota sit; per 7
porisma 12 hujus.

^I
ut radius

ut radius

ut secans lat.

ut sinus cōp. lat. ad radium,

^{II}

ad secantem lateris

ad sinum comp. lat.

ad radium,

ad radium,

^{III}

ita sin. comp. ang. dati

ita secans ang. dati

ita secans ang. dati

ita sin. comp. ang. dati,

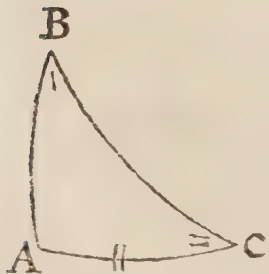
^{IIII}

ad sinum reliqui

ad secāt. cōp. reliq.

ad secāt. comp. reli.

ad sinum reliqui.



Ex latere & dato angulo adjacente, per
sextum porisma 12 hujus.

^I
ut radius

ut radius

ut secans lateris ad radium,

ut sinus cōp. lat. ad radium,

^{II}

ad secantem lateris,

ad sin. comp. lateris,

ad radium,

ad radium,

^{III}

ita secans comp. ang.

ita sinus anguli dati,

ita sinus ang. dati

ita sec. cōp. an. dati,

^{IIII}

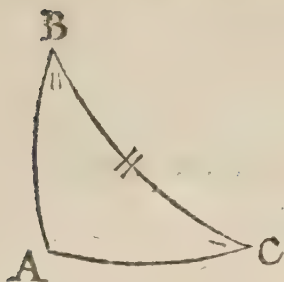
ad sec. ang. reliqui

ad sin. comp. ang. rel.

ad sin. comp. ang. rel.

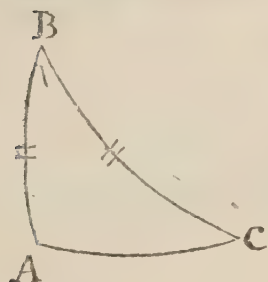
ad secant. ang. reliq.

Ex ba-



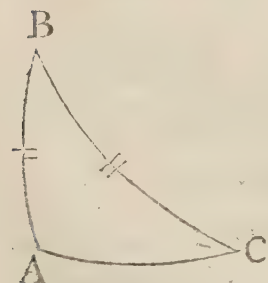
Ex basi & angulo dato, per 7 porisma 13 hujus.

^I ut radius	^{II} ad secantem basis,	^{III} ita tåg.compl.ang.dati,	^{IIII} ad tang.ang.reliq.
ut radius	ad sin.comp.basis,	ita tang.anguli dati	ad tang.comp.rel.
ut secans basis	ad radium,	ita tang.anguli dati	ad tang.comp.rel.
ut sin.comp.bas.	ad radium,	ita tåg.compl.ang.dati.	ad tang.ang. reliq.



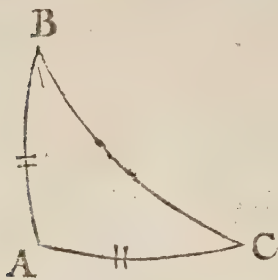
Ex basi & latere adjacente; per sextum porisma 13 hujus.

^I ut radius	^{II} ad tang.comp.lat.	^{III} ita tangens basis	^{IIII} ad secant. anguli.
ut radius	ad tang.lateris	ita tang.comp.bas.	ad sinum compl. ang.
ut tang.lateris	ad radium,	ita tang.comp.bas.	ad sinum compl. ang.
ut tåg.comp.lat.	ad radium	ita tang.basis	ad secant. anguli.



Ex basi & latere opposito; per secundum porisma 12 hujus.

^I ut radius	^{II} ad secant.comp.bas.	^{III} ita sinus lateris,	^{IIII} ad sinum anguli
ut radius	ad sinum basis	ita sec.comp.lat.	ad sec.comp.ang.
ut sec.comp.bas.	ad radium	ita sec.comp.lat.	ad sec.comp.ang.
ut sinus basis	ad radium	ita sinus lateris	ad sin. anguli.



Ex utroque latere ; per tertium porisma 13 hujus.

^I
ut radius

^{II}
ad sec.cōp.lat.unius,

^{III}
ita tang.lat.alt.

^{IIII}
ad tang.ang. oppos.

ut radius

ad sinum lat.unius, ita tāg.cōp.lat.alt.

ad tāg.cōp. ang.op.

ut sec.cōp.lat.uni. ad radium,

ita tāg.cōp.lat.alt. ad tāg. cōp.ang.op.

ut sinus lat.unius ad radium,

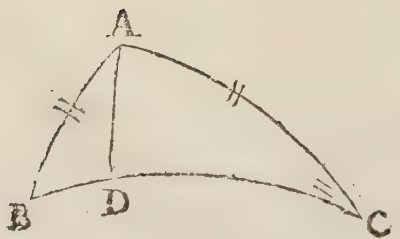
ita tang.lat.alteri. ad tang. ang.oppof.

In Obliquangulo Triangulo

inveniuntur

L A T V S & A N G V L I D V O.

Ex duobus lateribus, & angulo uni eorum opposito ;
insuper data specie anguli alteri dato lateri op-
positi : per primum porisma 15 hujus.

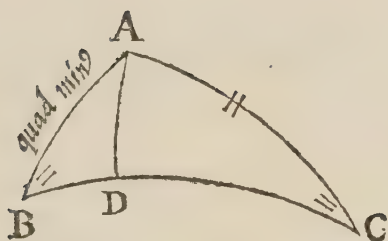


Arcus enim perpendicularis demissus ab
angulari puncto datorum laterum in tertium
latus, continuatum si necesse sit, secat obli-
quangulum triangulum datum in duotrian-
gula rectangula : ex quorum calculo quæsitā
dantur.

A N G V-

ANGVLVS ET LATERA DVO.

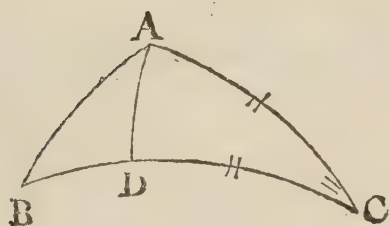
Ex duobus angulis & latere uni eorum opposito ; si
constet utrum tertium latus quadrante
majus sit, an minus: *per secundum
porisma 15 hujus.*



*Perpendicularis siquidem arcus à termino
lateris dati in latus utrique angulo dato adja-
cens (continuatum si oportet) descriptus, parti-
tur obliquangulum triangulum datum in duo
Triangula rectangula ; ex quorum datis postu-
lata innotescunt.*

LATVS ET ANGVLIVS DVO

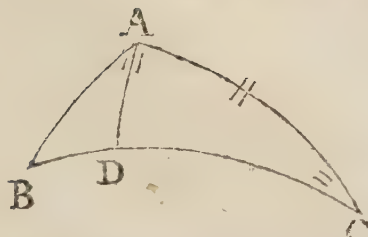
Ex duobus lateribus, & angulo ab iis comprehenso ; *per
tertium porisma 15 hujus.*



*Arcus enim perpendicularis, à termino late-
ris unius dati emissus in alterum latus datum
(productum si necesse sit) obliquangulum trian-
gulum in duo triangula rectangula dividit ; ex
quorum calculo ignota colliguntur.*

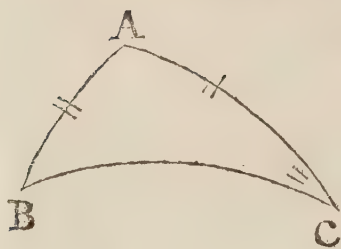
ANGVLVS ET LATERA DVO

Ex duobus angulis & latere utrique angulo ad-
jacente, *per quartum porisma 15 hujus.*



*Nam arcus perpendicularis ab angulo alteru-
tro in oppositum latus (continuatum si necesse sit)
egrediens, obliquangulum Triangulum in duo
Triangula rectangula secat, ex quorum calculo
postulata dantur.*

Ex duobus lateribus & angulo uni eorum opposito ;
per primum porisma 16 hujus. Nam



I II

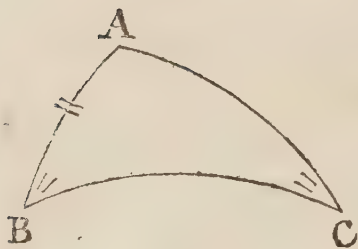
Vt sinus lateris dati , ad sinum anguli oppositi ;

III XIII

ita sinus alter. lateris dati, ad sinum ang. oppositi.

L A T V S

Ex duobus angulis, & latere uni eorum opposito ; *per*
secundum porisma 16 hujus. Nam



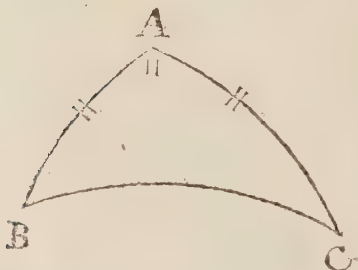
I II

Vt sinus anguli dati , ad sinum lateris oppositi.

ita sinus alter. ang. dati, ad sinum lateris oppositi.

L A T V S T E R T I V M

Ex duobus lateribus , & angulo
ab iisdem comprehenso ;
per primum porisma
17 hujus. Nam

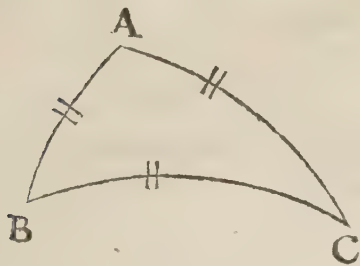


I	II	III	IIII
Et radius	ad sinum rectum,	ita sinus rectus	ad quartum.
	lateris unius.	lateris alterius.	

I	II	III	IIII
<i>Et radius</i>	<i>ad quartum</i>	<i>ita sinus versus</i>	<i>ad differentiam si-</i>
		<i>anguli dati</i>	

verforum tertii lateris, & reliquorum laterum differentia. Hæc vero differen-

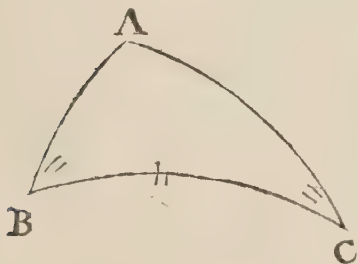
differentia ad sinum versum differentiae laterum adjecta, componit sinum versum lateris quaesiti.



ANGVLVS QVIVIS

Ex tribus lateribus; per secundum porisma 12 hujus. Nam

I	II	III	IIII
<i>Vt radius</i>	<i>ad sinum rectum</i>	<i>ita sinus rectus</i>	<i>ad quartum.</i>
	<i>lat. unius,</i>	<i>later. alterius</i>	
I	II	III	IIII
<i>Vt quartus</i>	<i>ad radium,</i>	<i>ita differentia si-</i>	<i>ad sinum versum</i>
		<i>numm vers. tertii</i>	<i>ang. quaesiti.</i>
		<i>lat. & reliq. late-</i>	
		<i>rum differentiae.</i>	

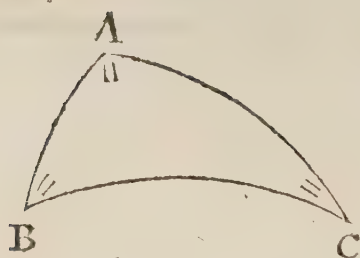


ANGVLVS TERTIVS.

Ex duobus angulis, & latere utriusque angulo adjacente; per tertium porisma 17 hujus. Nam

I	II	III	IIII
<i>Vt radius</i>	<i>ad sin. rectum</i>	<i>ita sin. rectus</i>	<i>ad quartum</i>
	<i>anguli unius,</i>	<i>ang. alterius</i>	
I	II	III	IIII
<i>Vt radius</i>	<i>ad quartum</i>	<i>ita sinus versus</i>	<i>ad differen-</i>
		<i>lateris dati</i>	

tiam sinuum versorum quaesiti anguli, & differentiae anguli unius dati, & alterius ad semicirculum residui. Differentia igitur haec addita ad sinum versum anguli unius dati, & reliqui ad semicirculum complemexti, componit sinum versum anguli quaesiti.



L A T V S Q V O D V I S.

Ex tribus angulis; per quartum
porisma 17 hujus. Nam

I	II	III	IIII
<i>Vt radius</i>	<i>ad sinum rectum anguli unius,</i>	<i>ita sinus rectus ang. alterius</i>	<i>ad quartum</i>
I	II	III	IIII
<i>Vt quartus</i>	<i>ad radium,</i>	<i>ita differentia si- num vers. tertii ang. & differen- tie ang. unius, & alterius ad semi- circulum residui.</i>	<i>ad sinum versum lateris quaesiti.</i>

F I N I S.

Μόνω τῷ Θεῷ δόξα.



